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ABSTRACT

This third in a series of six learning modules on instructional planning is designed to give secondary and postsecondary vocational teachers experience in developing each component of the various kinds of instructional units and using them to create a written unit plan for improving instruction. The terminal objective for the module is to develop a unit of instruction. Introductory sections relate the competency dealt with in this module to others in the program and list both the enabling objectives for the five learning experiences and the resources required. Materials in the learning experiences include required reading, self-check quizzes, model answers, case situations, model unit plans, performance checklists, and the teacher performance assessment form for use in evaluation of the terminal objective. (The modules on instructional planning are part of a larger series of 100 performance-based teacher education (PBTE) self-contained learning packages for use in preservice or inservice training of teachers in all occupational areas. Each of the field-tested modules focuses on the development of one or more specific professional competencies identified through research as important to vocational teachers. Materials are designed for use by teachers, either on an individual or group basis, working under the direction of one or more resource persons/instructors.) (TA)

ED149061

MODULE

B-3

Develop a Unit of Instruction

MODULE B-3 OF CATEGORY B—INSTRUCTIONAL PLANNING
PROFESSIONAL TEACHER EDUCATION MODULE SERIES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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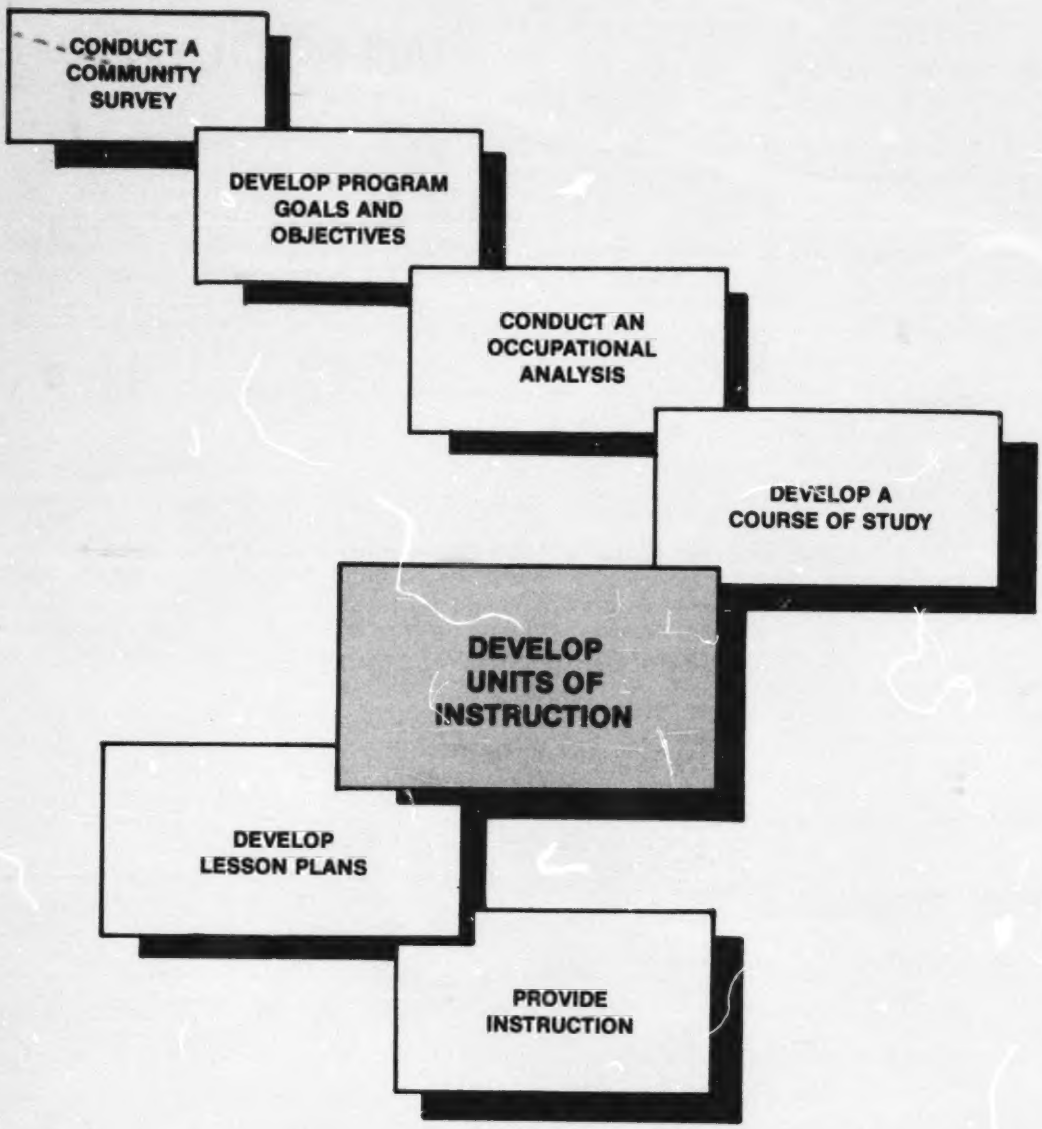

CURRICULUM DEVELOPMENT PROCESS

FOREWORD

This module is one of a series of 100 performance-based teacher education (PBTE) learning packages focusing upon specific professional competencies of vocational teachers. The competencies upon which these modules are based were identified and verified through research as being important to successful vocational teaching at both the secondary and post-secondary levels of instruction. The modules are suitable for the preparation of teachers in all occupational areas.

Each module provides learning experiences that integrate theory and application; each culminates with criterion referenced assessment of the teacher's performance of the specified competency. The materials are designed for use by individual or groups of teachers in training working under the direction and with the assistance of teacher educators acting as resource persons. Resource persons should be skilled in the teacher competency being developed and should be thoroughly oriented to PBTE concepts and procedures in using these materials.

The design of the materials provides considerable flexibility for planning and conducting performance-based preservice and inservice teacher preparation programs to meet a wide variety of individual needs and interests. The materials are intended for use by universities and colleges, state departments of education, post-secondary institutions, local education agencies, and others responsible for the professional development of vocational teachers. Further information about the use of the modules in teacher education programs is contained in three related documents: **Student Guide to Using Performance-Based Teacher Education Materials, Resource Person Guide to Using Performance-Based Teacher Education Materials** and **Guide to Implementation of Performance-Based Teacher Education.**

The PBTE curriculum packages are products of a sustained research and development effort by The Center's Program for Professional Development for Vocational Education. Many individuals, institutions, and agencies participated with The Center and have made contributions to the systematic development, testing, revision, and refinement of these very significant training materials. Over 40 teacher educators provided input in development of initial versions of the modules; over 2,000 teachers and 300 resource persons in 20 universities, colleges, and post-secondary institutions used the materials and provided feedback to The Center for revision and refinement.

Special recognition for major individual roles in the direction, development, coordination of testing, revision, and refinement of these materials is extended to the following program staff: James B. Hamilton, Program Director; Robert E. Norton, Associate Program Director; Glen E. Fardig, Specialist; Lois Harrington, Program Assistant; and Karen Quinn, Program Assistant. Recognition is also extended to Kristy Ross, Technical Assistant; Joan Jones, Technical Assistant; and Jean Wisenbaugh, Artist for their contributions to the final refinement of the materials. Contributions made by former program staff toward developmental versions of these materials are also acknowledged. Calvin J. Cotrell directed the vocational teacher competency research studies upon which these modules are based and also directed the curriculum development effort from 1971–1972. Curtis R. Finch provided leadership for the program from 1972–1974.

Appreciation is also extended to all those outside The Center (consultants, field site coordinators, teacher educators, teachers, and others) who contributed so generously in various phases of the total effort. Early versions of the materials were developed by The Center in cooperation with the vocational teacher education faculties at Oregon State University and at the University of Missouri-Columbia. Preliminary testing of the materials was conducted at Oregon State University, Temple University, and University of Missouri-Columbia.

Following preliminary testing, major revision of all materials was performed by Center Staff with the assistance of numerous consultants and visiting scholars from throughout the country.

Advanced testing of the materials was carried out with assistance of the vocational teacher educators and students of Central Washington State College; Colorado State University; Ferris State College, Michigan; Florida State University; Holland College, P.E.I., Canada; Oklahoma State University; Rutgers University; State University College at Buffalo; Temple University; University of Arizona; University of Michigan-Flint; University of Minnesota-Twin Cities; University of Nebraska-Lincoln; University of Northern Colorado; University of Pittsburgh; University of Tennessee; University of Vermont; and Utah State University.

The Center is grateful to the National Institute of Education for sponsorship of this PBTE curriculum development effort from 1972 through its completion. Appreciation is extended to the Bureau of Occupational and Adult Education of the U.S. Office of Education for their sponsorship of training and advanced testing of the materials at 10 sites under provisions of EPDA Part F, Section 553. Recognition of funding support of the advanced testing effort is also extended to Ferris State College, Holland College, Temple University, and the University of Michigan-Flint.

Robert E. Taylor
Director
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THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University 1960 Kenny Road Columbus Ohio 43210

The Center for Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning and preparation. The Center fulfills its mission by:

- Generating knowledge through research.
- Developing educational programs and products.
- Evaluating individual program needs and outcomes.
- Installing educational programs and products.
- Operating information systems and services.
- Conducting leadership development and training programs.

AAVIM

AMERICAN ASSOCIATION FOR VOCATIONAL INSTRUCTIONAL MATERIALS

Engineering Center
Athens, Georgia 30602

The American Association for Vocational Instructional Materials (AAVIM) is an interstate organization of universities, colleges and divisions on vocational education devoted to the improvement of teaching through better information and teaching aids.

INTRODUCTION

If you walk through a number of vocational education classrooms you are likely to see teachers standing before their classes teaching lessons, or students busy in the laboratory on their assigned tasks. In the course of a short visit it would be difficult to see any pattern in all this, and you might come away with the impression that vocational instruction is simply made up of a series of lessons and lab assignments strung together to fill out the school year. Such an impression would be quite wrong.

A really well planned vocational curriculum has a far more sophisticated structure. It has its foundation in an analysis of what the community wants from its vocational programs, and what the occupation requires of its beginning workers. Based on this information, a number of broad goals and specific objectives are laid out and a complete course outline (or course of study) is constructed. The next step is to build blocks of instruction, called units, into the program, centering each one around a single important topic. Finally, the vocational teacher prepares the lessons and the other experiences that help students to achieve the learning objectives described in the unit.

The lessons and student activities are what the visitor sees as he enters the classroom door, but they are really the culmination and most easily visible part of a long process of instructional planning. This module is concerned with one part of that process . . . developing units of instruction Other modules in the series take you through the preceding and succeeding steps, but it is not essential for you to have completed them before you develop competence in planning units of instruction.

Units, focusing as they do on carefully chosen topics in the course, help bring form and coherence to teaching and learning. Teachers can organize instruction so that all the knowledge and skills of the occupation are given proper emphasis and an appropriate share of the available instructional time. Students can gain insight into the relationships of the things they learn. Because the subject matter is organized into manageable blocks, they can keep informed of their progress and know that they are actually learning.

This module describes the various kinds of instructional units and explains how they can be used to improve instruction in the vocational program. It tells you how to develop each component of a unit and how to put them all together to create a written unit plan. By completing this module successfully, you should be competent in developing instructional units in your vocational service area. Your classroom teaching will be the better for it.

ABOUT THIS MODULE

Objectives

Terminal Objective: While working in an actual school situation, develop a unit of instruction. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 53–54 (*Learning Experience V*).

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the concepts involved in planning a unit of instruction (*Learning Experience I*).
2. After completing the required reading, demonstrate knowledge of the principles involved in selecting objectives, learning activities, and evaluation procedures for an instructional unit (*Learning Experience II*).
3. After completing the required reading, organize the content of a hypothetical teacher's plans into a unit plan, using an accepted format (*Learning Experience III*).
4. For a simulated situation, develop a unit of instruction (*Learning Experience IV*).

Prerequisites

To complete this module, you must have competency in determining the needs and interests of students and in developing student performance objectives. If you do not already have these competencies, meet with your resource person to determine what method you will use to gain these skills. One option is to complete the information and practice activities in the following modules:

- *Determine Needs and Interests of Students*, Module B-1
- *Develop Student Performance Objectives*, Module B-2

Resources

A list of the outside resources which supplement those contained within the module follows. Check with your resource person (1) to determine the availability and the location of these resources, (2) to locate additional references in your occupational specialty, and (3) to get assistance in setting up activities with peers or observations of skilled teachers, if necessary. Your resource person may also be contacted if you have any difficulty with directions, or in assessing your progress at any time.

Learning Experience I

Optional

Reference: Taba, Hilda. *Curriculum Development: Theory and Practice.* New York, NY: Harcourt, Brace & World, Inc., 1962.

A filmstrip projector and audiotape equipment for viewing and listening to a filmstrip presentation.

A screen to use with the projector.

The filmstrip and audiotape, "Teaching Units and Lesson Plans," VIMCET filmstrip and audiotape #13, VIMCET Associates, Los Angeles, CA, 1966.

Learning Experience II

Optional

Reference: Mager, Robert F. and Kenneth M. Beach. *Developing Vocational Instruction.* Belmont, CA: Fearon Publishers, 1967.

Learning Experience III

No outside resources

Learning Experience IV

No outside resources

Learning Experience V

Required

An actual school situation in which you can develop a unit of instruction.

A resource person to assess your competency in developing a unit of instruction.

This module covers performance element numbers 56–61 from Calvin J. Cotrell *et al., Model Curricula for Vocational and Technical Education: Report No. V* (Columbus, OH: The Center for Vocational Education, The Ohio State University, 1972). The 384 elements in this document form the research base for all The Center's PBTE module development.

For information about the general organization of each module, general procedures for their use, and terminology which is common to all 100 modules, see About Using The Center's PBTE Modules on the inside back cover.

Learning Experience I

OVERVIEW

After completing the required reading, demonstrate knowledge of the concepts involved in planning a unit of instruction.

You will be reading the information sheet, Planning a Unit of Instruction, pp. 6–15.

You may wish to read the supplementary reference, Taba, *Curriculum Development: Theory and Practice*, pp. 343–368.

You may wish to view the VIMCET filmstrip presentation, "Teaching Units and Lesson Plans."

You will be demonstrating knowledge of the concepts involved in planning an instructional unit by completing the Self-Check, pp. 17–19.

You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 21–22.

For information about what is meant by an instructional unit, its function in the instructional program, how to go about selecting and developing a unit topic, and how to involve students in the planning process, read the following information sheet:

PLANNING A UNIT OF INSTRUCTION

The Need for Planning for Instruction

The more experience one has as a teacher, the more one realizes the importance of thorough planning for effective instruction. The beginning teacher, however, often has difficulty in comprehending the concept of effective planning. He or she may observe other teachers doing some excellent teaching without a written plan in sight. A beginning teacher may even think that written planning is too time consuming and that time devoted to writing plans could be better spent in more productive tasks.

Professional educators agree that the ability to plan for instruction is essential to successful teaching of vocational subjects. The teacher's instructional plans can be compared to an architect's plans, in which (1) the proposed building is designed as a whole, (2) various important sections of the structure are planned as units, and finally, (3) the minute details of construction are specified. A sound structure and a handsome building would not result if the architect or contractor planned the building as it was going up and tried to keep the workers busy by finding some bit of construction work for them to do on a day-to-day basis.

Instructional plans, like architectural plans, need to encompass the design of the whole, the structure of each unit, and the construction of the individual parts. In designing vocational education programs, these plans are called the **course of study,** the **unit plan,** and the **daily lesson plan** respectively. Each of these plans has a unique and essential purpose in the work of the class, and each is dependent on the other to form a unified and rational curricular structure.

Preplanning instruction helps the teacher to see the program as a whole and to make sure that every student learning activity, every teacher-presented lesson, and every evaluation procedure contributes to the ultimate goal. Preplanning units and lessons permits the teacher to establish clearly defined objectives, secure the necessary instructional materials, and select varied activities designed to enhance learning. Teachers who do not preplan thoroughly tend to use a limited range of activities and provide uneven coverage of the desired subject matter. In vocational education, this usually means a too-heavy reliance on lecture-demonstration and project exercises and sometimes the omission of the teaching of some important occupational skills.

What is a Unit of Instruction?

A unit of instruction is a well-defined portion of the total instructional program, centering around a single topic or cluster of occupational competencies. It is an organization of objectives, learning activities, and resources prepared for use in a specific teaching/learning situation.

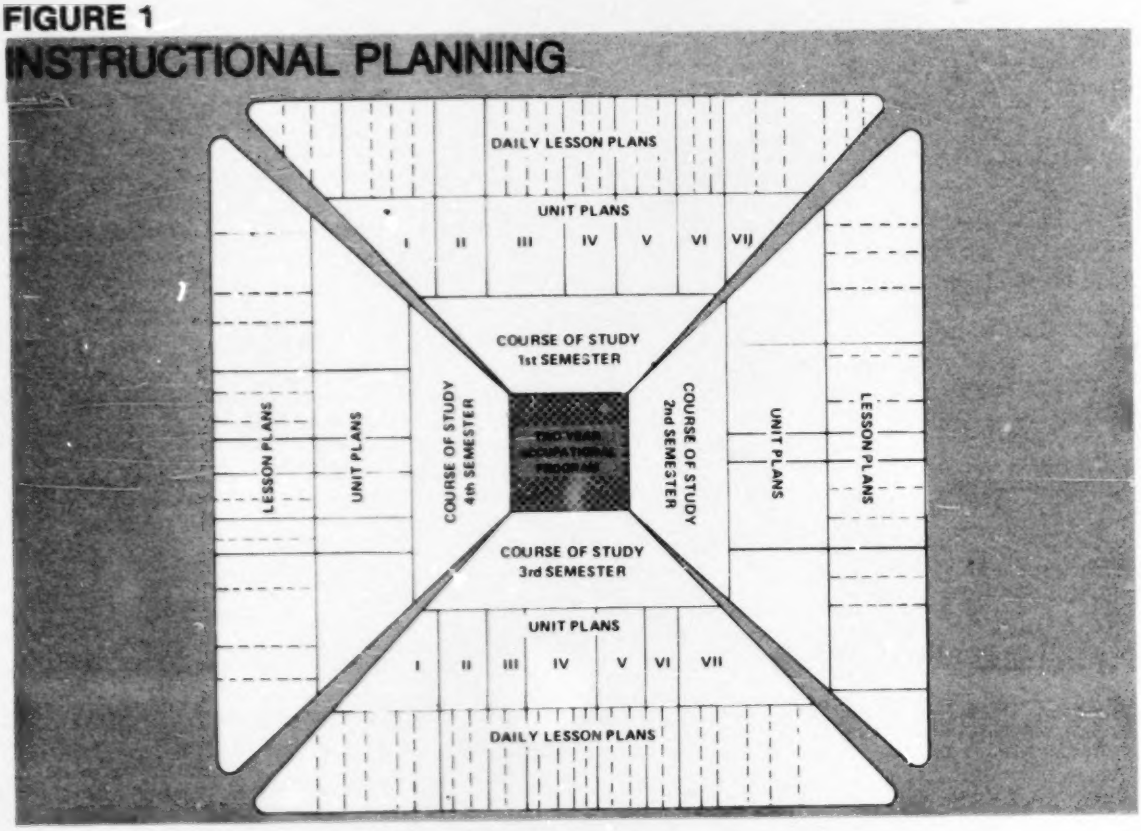
The relation of an instructional unit to the total curriculum is illustrated in Figure 1. At the center is a description, in broad terms, of the whole occupational program (for example, a two-year program to prepare day-care supervisors). The program is divided into semesters of work, with a designated proportion of the total subject matter assigned to each semester. A description of what is to be included in the semester is contained in a course of study, course outline, or a curriculum guide for the program.

Usually the course of study is in the form of an outline or a series of general statements of topics and activities. It is of necessity brief and is stated in broad terms. The course of study may be developed by the state department of education, the local school system, a curriculum laboratory, or industry, and furnished to the teacher to guide instructional planning. In some cases, teachers are expected to develop courses of study for their own program, particularly if it is a new or unusual one, or if the present guide is weak and outdated.

The next division in the instructional scheme is that of the unit of instruction. Units are sections of subject matter organized from the material of the course of study and developed around one or more topics, problems, skills, or operations. Units may vary greatly in length of time to complete and degree of complexity for students. A semester's work may be organized into as few as two units or as many as ten, for example. The document that describes the contents of a unit (sub-topics, resources, student activities, evaluation procedures, etc.) is called a **unit plan.** It is the purpose of the rest of this module to give the teacher an opportunity to develop skill in the planning of units.

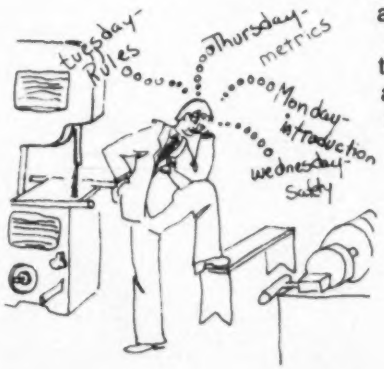
A unit is not presented to the class all at once, but is further divided into a series of lessons to be

FIGURE 1



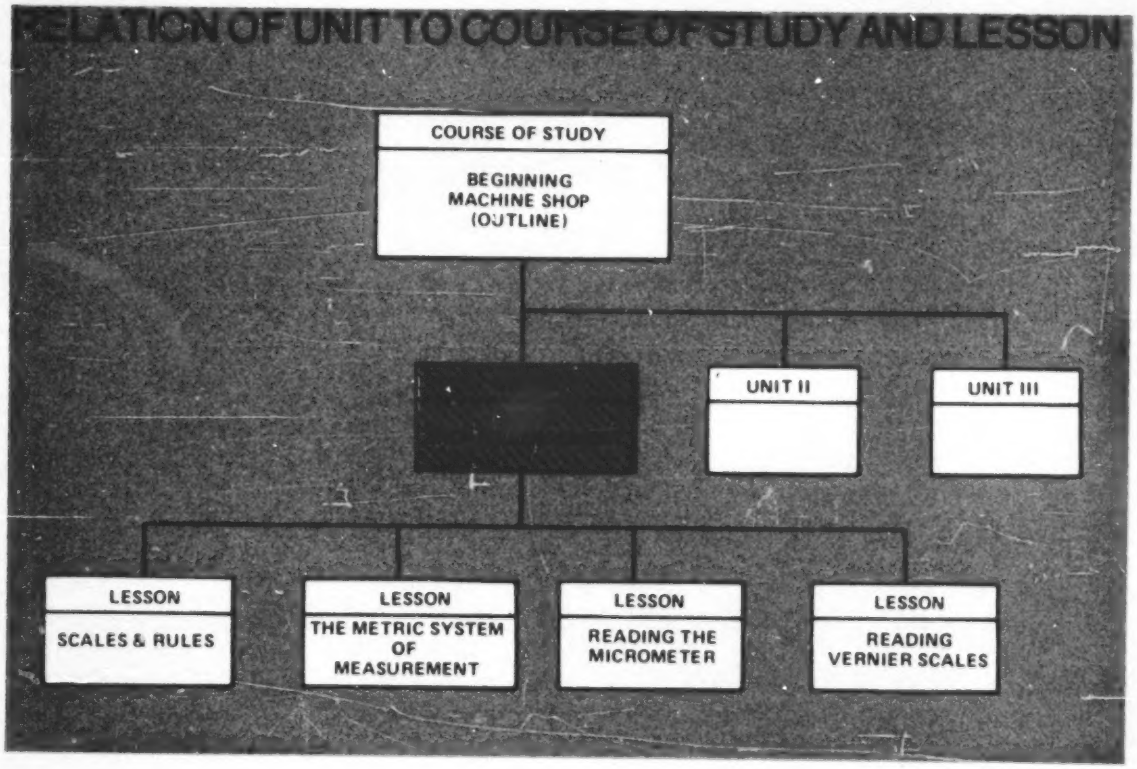
given over a number of class sessions. The lessons making up the unit are related to the unit as a whole and to each other. The daily lesson is limited to one specific aspect of the unit and may be concerned with a particular operation, machine, process, or some piece of related information. There may be a few or many lessons within a unit of instruction depending on the complexity of the topic.[1]

As an illustration of the relation of a unit to a course of study and a lesson, consider how an instructor in a machine shop might plan to organize instruction. He or she is teaching the beginning course in the machinist program and, from the course of study furnished by the administration, he or she notes that among the important concepts to be taught during the semester is that of accurate shop measurement, using basic techniques and simple instruments. After some thought and tentative planning, the teacher selects "Basic Shop Measurement" as one unit of instruction and decides to allocate about five days of class time for the unit. As a part of the learning experiences for the unit, he or she also decides to plan a series of daily lessons on various aspects of the topic of the unit, including an introductory lesson, and lessons on rules, the metric system, the micrometer, and the vernier scale. The teacher's plans are graphically represented in Figure 2.



1. To gain skill in planning for a single lesson, you may wish to refer to Module B-4, *Develop a Lesson Plan*.

FIGURE 2

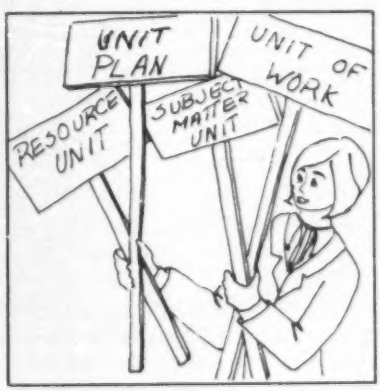


Types of Units

An instructional unit is, in abstract terms, an organized way of thinking about instruction. It is a theme for learning over a period of time. The act of unit planning results in a written document, or plan, from which grows the actual teaching/learning activities engaged in by the teacher and students. The term "unit" has been used in a number of ways in education, with some resulting confusion. In the literature of vocational education, you will find the term "unit" used to describe anything from a single classroom lesson to a large block of individualized instruction. You must read the material carefully to determine in what context the author uses the term.

The word "unit" is used in a number of different ways in education. Each one has special value, and the proper use of them should be in every teacher's repertory.

- **Unit of work.**—A unit of work is the organization of student learning experiences built around a unit topic, theme, problem, or other unifying element. A unit of work is what actually takes place in the classroom or laboratory in the actual learning situation.
- **Unit plan.**—The unit plan is a particular teacher's written outline of the unit of work he or she expects to develop with a group of students. The unit plan may be entirely original with the teacher, or it may be based on units developed by others. A unit plan may be a very condensed outline on a single sheet of paper, or a large document complete with information, assignments, test questions, and answers.
- **Resource unit.**—As its name implies, this is a model unit intended to be used as a resource by teachers as they plan a unit for a particular group of students. It is a compilation of suggested learning activities, experiences, and materials from which teachers can draw. Typically, a resource unit is developed as a cooperative venture by a number of teachers or curriculum specialists. Resource units are also available from commercial publishers and industry. A resource unit is not meant to be followed strictly, but should be changed and adapted by the teacher to suit his or her class and teaching situation.
- **Subject matter unit.**—This type of unit is one that is designed to convey a body of specific skills and related content information to students. The objectives for the unit are stated in terms of student behaviors and occupational competencies. In a dental technician program, for example, a subject matter unit might be constructed on the subject of "Taking Dental X-rays"; in a tractor mechanics program, "Servicing the Hydraulic Control System"; in a cosmetology program, "Coloring Hair." The "project teaching plan," particularly as used in industrial education, is a kind of subject matter unit since all the instruction related to some student shop project is treated as a unit.



Some examples of possible unit topics drawn from several vocational service areas are shown in Sample 1. Note that the topics are obvious divisions of the total program, and each topic would probably take several lessons to cover. A number of student learning activities are possible within the topic.

SAMPLE 1

UNIT TOPICS

OCCUPATIONAL AREAS	EXAMPLE OF A UNIT TOPIC
Commercial Photographer	Portrait Lighting
Graphic Artist	Printing Papers
Dental Auxiliary	Taking X-ray Photographs
Needle Trades Worker	Decorative Stitchery
Distributive Education Worker	Customer Buying Motives
Nurses Aide	Medical Ethics
Child Care Worker	Music Activities for Children
Light Aircraft Pilot	Navigational Maps and Charts
Architectural Draftsman	Roofs—Design and Construction

There is no especially recommended length for an instructional unit. A unit involving a limited study of a fairly simple topic might take only a few days of class time. A complex topic involving individual study activities, class lectures and discussions, laboratory work, and/or student reports, might require two or three weeks for the group to complete. However, if the planned unit is unusually short, the teacher should question whether the topic deserves to be treated as a unit of work or can be dealt with simply as a lesson. A very large unit, scheduled to last several weeks, may make it difficult for you to maintain student interest; the unit may need to be revised, divided, or shortened. In any case, if student interest and effort flag, it is best not to continue with your original unit plans, but to bring the students' work to an early close and to replan the unfinished portion of the unit.

Identifying Units Within a Course of Study

The first step in organizing a unit of work is to decide on the topic. As you begin to search through your instructional materials, you will discover a number of sources of ideas for unit topics. Among these are—

- **The curriculum guide or course of study developed for your vocational education program.**—The outline headings or main topics will suggest ideas around which to build a unit. Because curriculum guides are usually developed within the state, they tend to take local conditions into consideration, and are therefore especially helpful. In addition to local curriculum materials, you might investigate the great number of course outlines developed at the regional curriculum laboratories and state departments of education around the country.
- **The textbook for your program.**—Either the students' texts or higher level texts can be utilized to develop topics. Chapter divisions may become units of work if they are well organized. The texts may also suggest student learning activities appropriate to the topic. Textbooks are very convenient sources for units and are usually carefully developed,

but they do have some disadvantages. They may be very general in nature, they may not be up to date, and they may not be entirely suitable for the local situation.

- **Curriculum experts in the various occupational areas.**—Many research and development projects have developed ideas and ma-

terials that may be very useful. To find these materials, check the curriculum library in your state department of education, your local school system, or nearby university. In particular, look for material in the ERIC system (Educational Resources Information Center) and in the serial, *Abstracts of Instructional and Research Materials in Vocational and Technical Education* (AIM/ARM). These sources are rich in information on units of work that have already been developed.

- **Other vocational teachers in your occupational area, vocational supervisors, or college professors.**—These colleagues may be able to suggest significant or especially effective topics for units. You may get suggestions in college courses, curriculum planning sessions, in subject-area meetings, or through informal conversation. These kinds of contacts are particularly important in suggesting topics related to current trends or local conditions in your occupation. For example, a meeting in which the latest guidelines for safety are discussed may result in a unit on occupational safety as it affects your area.
- **Current events.**—These should not be ignored in the search for stimulating unit topics. Current happenings often excite a great deal of student interest which can be directly related to an aspect of the course of study. A unit based on a current topic of interest can add a much needed change of pace and a refreshing variety to a demanding occupational program. News of a medical advance might be used as a topic around which to build a unit in health occupations; an event in the space program might trigger an interest in the machining of exotic metals; concern for the victims of drought might serve as a focus for a study of low-cost, high-nutrition foods in a foods program.

In a competency-based vocational education (CBVE) program, units of instruction can be built around clusters of occupational competencies. All the learning activities of the unit need to be directed at the students' attainment of specific skills and abilities. In accordance with the principles of CBVE, provision will need to be made in the unit plan for students who already possess some competency, or who achieve the competencies quickly. This can be done by providing enrichment experiences, including optional competencies, or organizing student-directed teaching.

Unit topics may come from several informational aspects of the vocational curriculum, and may range in depth from very specific occupational information to the difficult abstract concepts (the "big ideas") phrased as themes, issues within the occupation, or new developments. The three kinds of information on which unit topics may be based are--

- **Technical information that the workers must know in order to make decisions in doing their work.**—This may involve knowledge of scientific facts, data, mathematical processes and/or technical terms, etc. It may also involve an understanding of the factors motivating human behavior.
- **General information that is good for the worker to know, but is not essential to do the job properly.**—This information can make the job more interesting and the worker a more enlightened citizen. In this category are topics relating to the history of the occupation, its social significance, scientific basis, or economic importance.
- **Vocational guidance information that helps the worker find and keep a job.**—Such topics as employment opportunities, employer-employee relations, job advancement, shop ownership, and labor laws are examples of the guidance information that can serve as the focus of units of work.

Checking Out the Unit Topic

Any proposed unit topic should be thought about critically, examined from a number of angles, then changed or modified as necessary. Your tentative topic should meet most or all of the following criteria:

- **The topic is significant.**—Experts in the area would agree that it directly helps students in their development as workers or individuals. The main ideas of the unit are worth the time and effort needed to master them. The topic is based on the analysis of the occupation and on the goals and objectives of the vocational program.
- **The topic is relevant to students.**—People in this age group and occupational area can be expected to perceive the relation of the topic to their own needs and interests. It has direct application to them in terms of self-realization, improvement of mental capacity, and/or economic gain.
- **The topic has a focus or continuity.**—It helps pull ideas and facts together and aids the student in sharpening his/her thinking on the subject. For example, a unit on the ethics of the occupation can help students grasp the total import of ideas that might be mentioned in passing in a number of isolated lessons.
- **The topic is not vague.**—It leads to other ideas, skills, and understandings.
- **The topic is feasible and practical.**—The teacher's background and abilities are adequate, instructional resources are available, equipment and supplies are satisfactory, and there is time enough to complete the topic.
- **The topic has a goal.**—At the end of the unit, students are able to do something they couldn't do before, or know something they hadn't known before. Students are motivated to continue learning through this process.

Preparing for the Unit

To prepare for the unit, the teacher should do some general preparation activities before going on to the actual planning for the class. These activities include—reading and study on the topic, developing a bibliography or list of student study materials, and designing and trying out student projects and activities.

The teacher getting ready for a unit should know as much as possible about the topic. This may entail reading (or re-reading) the section in the text dealing with the topic and reading advanced texts for additional information. Curriculum guides or curriculum project reports may have more information or may suggest other sources. Periodical articles on the topic, which are available in the library, may have information on new developments or the latest trends. The librarian can help you develop a bibliography or a reading list for your personal use or for use by your students.

Sometimes it is helpful to make visits and confer with people. If a field trip is part of the tentative plans for the unit, you should visit the place to determine whether the trip would be valuable and whether arrangements can be made for such a trip. Carefully written and kept notes about the people you meet and the places you visit can help you to remember valuable information. It is a good idea to talk to people who have special expertise on the topic; perhaps you could make a tape recording of the conversation for your own review or for the use of the class.

You can check audiovisual catalogs for sources of instructional material. Many of them have short descriptions of the films and slide/tapes that will help you decide which ones you will want to preview.

Government documents are rich sources of information that you should not ignore. It would be difficult to think of a unit topic in vocational education about which there is not a government publication of some kind. Agriculture and home economics teachers have long been familiar with the value of government bulletins—other vocational teachers should learn to tap this source of up-to-date and specialized information. The documents librarian in the public library or the university library can also help you locate publications on your topic.

Depending on the nature of the unit topic, you may want to prepare a reading list or bibliography for your students. Group or individual student study can be encouraged by giving students leads on materials that they can find and use. You should be sure to check that the material is concerned with the topic, is at the proper level of difficulty, and is available to the students. In addition to books, the list can include articles, pamphlets, audiovisual material, people to see, places to visit, companies to write to, or any other sources of information. The bibliographic form used should be one that is simple and easy to understand.

If a student project is a part of the plans for the unit, it should be thoroughly thought out and tested during the planning stage. A worthwhile unit can be ruined by the inclusion of a project that fails because it is too difficult, it takes too much time, or the needed supplies or equipment are not

available. If you have not used the project before, you should go through the entire process yourself to be sure it is practical. In some situations, you may also want to have a high-quality example of a finished product to show students. However, it is important that the project, like the other phases of the unit, provide students with an opportunity for input and learning. If all the sources are pre-selected and pre-digested, students will be denied the chance to learn as much as they might. In vocational education, as in all education, students must be encouraged to search, discover, and apply new information. In short, they need to learn how to learn.

Involving Students in Planning Instructional Units

Student involvement in curriculum planning is extremely valuable to the vocational teacher. It can increase student interest and motivation, make the unit more relevant to students, and provide the teacher with creative ideas and suggestions for the unit. This is true for all levels of students in all areas of instruction . . . whether senior high school students, technical school students, or students in adult education programs. There are a number of specific reasons for involving students—

- **Varying needs.**—The instructional units based on student needs can be more helpful to the student than those developed by someone without knowledge of the students.
- **Varying capabilities.**—Students come to a learning situation with certain capabilities which can facilitate learning, and often have certain deficiencies which can hinder learning. Students and teachers working together will know this, and plan for it.
- **Varying learning styles.**—Students react in different ways to teaching methods and materials. They have different learning styles. Thus, input from students can help the teacher select the most interesting and compatible learning materials and procedures.
- **Commitment.**—When students have been involved in planning they are more committed to learning than when they passively accept what is presented to them.
- **Self-sufficiency.**—The ultimate aim of education is to develop self-sufficient learners. Unless students learn how to diagnose and meet their educational needs, they will not become self-sufficient. They learn to do it by doing it, initially with the help of a teacher.

Of course, there are definite limits to what students can select and change. The essential technical knowledge and the necessary job-entry skills must be retained in the unit. There may be some tedious practice that must be accomplished or some difficult theory that must be learned whether students particularly like it or not. Students are not aware of everything they need to know about the occupation; otherwise they wouldn't be students. If there is a conflict between the suggestions of students and the best professional judgment of the teacher, the teacher must take final responsibility and make the decision.

Following are some suggested ways to involve students in curriculum planning. You should also take advantage of any other opportunity to get student feedback that presents itself.

- **Obtain student reaction.**—You can make a tentative unit plan and then ask students to react to the substance of your planning. For example, you could ask students to indicate favorable or unfavorable responses to the unit objectives, learning activities, resources, or other items.

- **Hold a class discussion.**—After a brief explanation of the purposes of the upcoming unit, you might ask a series of questions to promote discussion of what the students want to learn in the unit.
- **Make individual or committee assignments.**—You might ask students to help you with presenting specific parts of the unit. The students could prepare their assigned parts and present them to the entire class.
- **Organize student-directed interviews.**—You can prepare students to conduct interviews with workers or supervisors in the occupation. With careful planning and preparation, the information so obtained can be used in planning the unit.
- **Use brainstorming techniques.**—By involving the student group in a brainstorming session, you may get many ideas that can be incorporated in the unit plan.
- **Use problem-solving techniques.**—Help students identify problems they have encountered in their work experiences and projects. Some of these problems could be incorporated into the unit or could provide a basis for developing unit learning experiences.

Sequencing Units of Instruction

Not only must each unit be planned thoroughly, but the order or sequence in which they will be presented should be given careful consideration. Units should be presented in a sequence that is most helpful to the students, not necessarily what is most meaningful from the teacher's point of view. Try to determine how the subject matter looks to students, what interests them, and how they can build on what they already know. Here are some principles you should keep in mind as you plan the sequencing of units of instruction.[2]

- **Maintain student interest.**—Start the course with a unit that is highly interesting and motivating to students. For example, in graphic arts, have them print a very simple business card; in training child-care workers, show them how to make crafts projects. Intersperse units of this kind throughout the course to give students a lift from time to time.
- **Proceed from the general to the specific.**—Students usually find it makes most sense to first get the general idea—later learn specific details. Teach students how to operate a machine before getting into the theory, how to perform a customer service before teaching state occupational licensing regulations.
- **Use occupational logic.**—Analyze the chain of competencies to determine which skills must be learned before others can be attempted. Some units **must** be taught before others if students are to be able to master the subsequent units. Welding students, for example, must know how to handle and adjust welding equipment before they can make difficult overhead welds. Be careful about this, however. Sequencing is probably less rigid than most teachers suppose. Agriculture students, for instance, do not need to know the hybridization process before they can grow corn; cabinetmakers don't have to know a thing about wood joinery in order to apply a beautiful lacquer finish to furniture.
- **Provide for students to enter sub-occupations.**—Admit that not all your students will remain in the program until they complete it. Some students will leave to enter lower level jobs in the occupation. Sequence the units so that students can gain the skills they need in order to get a job at whatever point they leave. You can teach a student all the skills needed to get a job relining automobile brakes early on—then continue with other units until students who remain in the program become skilled auto mechanics.
- **Plan for culminating units.**—Develop some units that pull together the ideas and skills that have gone before. Periodically give students a chance to understand an entire process or practice a total job. These kinds of units are particularly important near the end of the program.

2. Adapted from Robert F. Mager and Kenneth M. Beach, Jr., *Developing Vocational Instruction* (Belmont, CA: Fearon Publishers, 1967), pp. 59–61.

If you are interested in finding out more about the place of the unit of instruction in the curriculum development process, you may wish to read Taba, *Curriculum Development: Theory and Practice*, pp. 343–368. This reference deals in more depth with curriculum development, and discusses the theoretical framework on which it is built.

For additional information on instructional units, you may wish to view the VIMCET filmstrip presentation, "Teaching Units and Lesson Plans."

The following items check your comprehension of the material in the information sheet, Planning a Unit of Instruction, pp. 6–15. Each of the five items requires a short essay-type response. Please respond fully, but briefly.

SELF-CHECK

1. How does a unit of instruction relate to the other parts of the instructional plan—such as the course of study, daily lesson plan, etc.?

2. It would appear that one very easy and efficient way of organizing a course into units would be to simply use the chapter headings of the textbook as unit topics and present the units in the same order as the textbook chapters. What do you see as the advantages and disadvantages of this approach?

3. Mr. Zelek, teacher of vocational related math, decided one rainy afternoon that it would be nice to have his class work on a unit. Gazing out of the window of the teachers' lounge for a minute or two, he came up with an idea. "I think we'll have a unit on mathematical games," he said to himself. "The kids will like that one . . . and maybe it'll do them some good."

   Comment on the method and the criteria Mr. Zelek used to select a unit topic.

4. A group of teachers at the new Main-Chance Adult Technical School were talking over lunch about the state of the country. They came to the conclusion that every occupational program in the school should include a unit on personal behavior, standards, and ethics in the particular occupation. How would you rate the value of this unit topic?

5. At a teachers' meeting at the Urban Area Vocational School, the group was discussing the value of involving students in developing unit plans. Miss Gooding from the evening program said, "Students must be involved in all aspects of planning. . . . After all, the student is the only one who knows what he or she needs to learn."

   Mr. Hardy interrupted loudly. "Bunk," he said. "Maybe you people in the adult program can involve students in planning, but our kids in the high school program can't handle that. It is our job as teachers to tell them what they have to learn, and their job to learn it."

   React to these two teachers' statements.

NOTES

Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same **major** points.

MODEL ANSWERS

1. A unit is an important part of instructional design. It is a section of the whole year's program that is contained in the course of study. A unit deals with one topic of subject matter, and may take from a few days to three weeks of class time to complete. Class lessons are developed out of the unit plan, with each lesson covering a very specific aspect of the unit. A lesson is almost always confined to one class period. The daily lesson is designed to help meet the objectives of the unit, the unit objectives are planned to further the objectives of the course, and the individual course is constructed to permit students to reach their occupational goals.

2. There is some merit in using textbook headings for unit topics. Textbook writers do attempt to organize the material into logical and teachable sections. The sequence is usually educationally defensible. Chapter headings as units would tend to minimize content omissions and repetition.

   There are also some serious drawbacks to relying solely on this method of instructional organization, including the following:

   - The subject matter of the text may not coincide with your course objectives.
   - The content may not be that required for your local occupational conditions or helpful in satisfying your students' needs.
   - Because it takes years to write and publish a text, even the latest one may be out of date in some ways.
   - Text chapters cannot tap the special interests and knowledge that your student group might bring to a unit.
   - Chapter sequencing tends to be very traditional and not necessarily presented in an order to enhance student motivation.

3. This is a poor way to select a unit topic. A unit should grow out of an instructional need and should not be used just because it would be nice to do. "The kids will like it," is a weak reason for selecting a topic. The teacher should have examined his course of study to find some important organizing ideas that could be used as the basis for the unit. He should have read a bit on the topic, thought a good deal, written a couple of tentative objectives to see how they would fit, and finally come up with a topic for a unit that will fit the training needs of his students. A well-chosen topic will develop their occupational skills and capture their interest at the same time.

4. Of course, we don't know much about the school and the students, but we can make a few general judgments about the proposed unit:

   The topic seems **significant.** Most occupations have standards of behavior for their workers, and for some occupations this is extremely important. Educators and employers would probably both agree that the topic is worth the time and effort spent on it.

   The topic is **relevant to students** because it affects their chances of getting and keeping a job. It is also likely to help them develop a set of values for their personal lives. The trick is for the teacher to present the topic in such a way that students will see its relevance and importance to themselves.

   If the topic is presented as a list of do's and don'ts it will not have much **focus or continuity.** It will be up to the thoughtful teacher to show how personal standards of behavior are related to many aspects of the occupation.

   We can't really tell how **feasible** such a unit would be, but since there don't seem to be any special requirements for it, there should be little difficulty. It depends on how much time teachers have for the planning and preparation of the unit.

   The **goal** for the unit is probably that of getting students to behave in an acceptable and ethical manner in their occupation. This goal is, no doubt, an important one, though it would be very difficult to observe and measure.

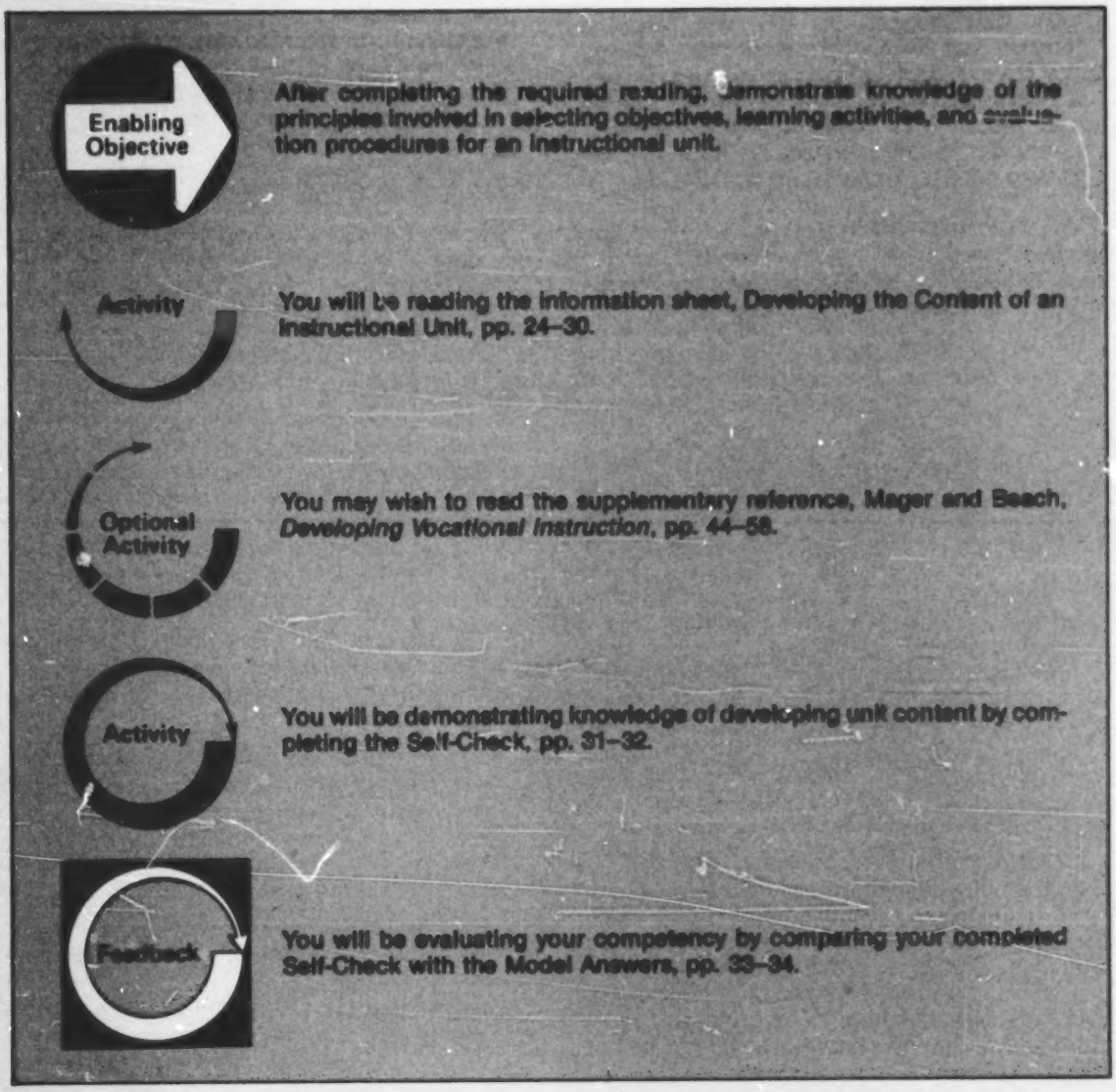
5. Both of the expressed opinions are somewhat extreme. The truth probably lies somewhere in between. The possibilities for student involvement in unit planning will vary with the program and the student body, but any group of learners can participate in planning in some way. Students may well be aware of their needs and can thus make suggestions that will help the teacher plan to meet those needs. However, they are not professionals or workers so they are unlikely to know all the requirements of the occupation or all their training needs. Miss Gooding, like other vocational teachers, has ultimate responsibility for the contents and approach of the unit.

   Mr. Hardy should realize that even sophomores in high school want to be consulted about their schooling. They are likely to be more motivated to learn and have a better understanding of their occupation if they are actively involved in the planning process. Given a chance they can contribute ideas to the unit plan. They can also ask some very penetrating questions about what they are expected to do.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same **major** points as the model responses. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Planning a Unit of Instruction, pp. 6–15, or check with your resource person if necessary.

Learning Experience II

OVERVIEW


Enabling Objective
After completing the required reading, demonstrate knowledge of the principles involved in selecting objectives, learning activities, and evaluation procedures for an instructional unit.
Activity
You will be reading the information sheet, Developing the Content of an Instructional Unit, pp. 24–30.
Optional Activity
You may wish to read the supplementary reference, Mager and Beach, *Developing Vocational Instruction*, pp. 44–58.
Activity
You will be demonstrating knowledge of developing unit content by completing the Self-Check, pp. 31–32.
Feedback
You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 33–34.

For information on how to develop performance objectives for a unit, how to select student learning activities, and some of the principles involved in selecting evaluation procedures for an instructional unit, read the following information sheet:

DEVELOPING THE CONTENT OF AN INSTRUCTIONAL UNIT

Developing Performance Objectives for a Unit

A plan for a unit of instruction is more than just a collection of good ideas. A unit is a well-designed structure, and good ideas are the materials of construction. Teachers who are building such plans need to select the materials carefully to meet the requirements of the job to be done (the objectives) and the needs of the people to be served (the students).

Student performance objectives should describe what students are to be able to do at the completion of the unit—what knowledge they will possess, what attitudes they will have, what skills they will be able to perform. In other words, the objectives of the unit should be stated in terms of student behavior.

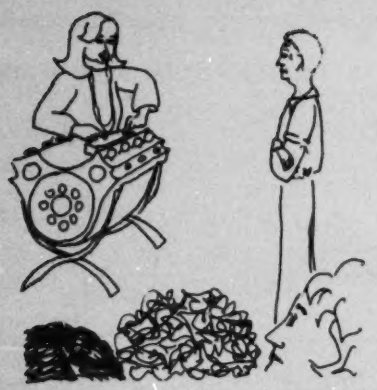
Performance objectives always should be written to include the components of performance, condition, and criterion. The **performance** component describes what the student will be engaged in doing; it must contain an action word or verb. The **condition** component outlines the circumstances under which the student will be performing the activity. It describes what students will be given to work with, what items they will be denied access to, and the environment in which they will demonstrate the performance. The **criterion** component describes the level of mastery or degree of proficiency that must be reached before the performance objective is achieved.

The performance objectives for the unit must support the objectives for the total occupational program. By achieving the objectives of the unit, students should be that much closer to achieving their ultimate objectives—successfully completing the program and being prepared to enter the occupation. If this direct relationship does not exist, any work completed on the unit could prove to be inefficient and ineffective. Selecting and developing the unit objectives, then, is the foundation of the plan.

An important source of unit objectives for vocational education is a careful analysis of the tasks to be performed at the entry level of the occupation.[3] A great many programs will have already been based upon a completed occupational analysis that can be used to select objectives. If such an analysis is not available, the following is a simplified procedure you could use.

1. Within the occupation for which you are preparing students, list those **on-the-job skills** you know your students must have for entry-level employment.
2. Develop general **objective statements** which reflect on-the-job entry skill.
   For example: "The student will have the ability to communicate with the public in solving customer's automotive problems."
3. Develop **unit objectives** which are as close to the out-of-school performance statement as possible.
   For example: "The student will have the ability to explain to the instructor's and to fellow students' satisfaction any automotive diagnosis the student performs in the school shop. This is to include the procedures used, malfunctions observed, the cause of the malfunction, and repairs needed to remove the malfunction."

3. To gain skill in analyzing occupational tasks, you may wish to refer to Module A-7, *Conduct an Occupational Analysis.*



It is not too helpful to state a unit objective in broad and ambiguous terms, such as "to appreciate the place of the landscape gardener in horticulture." With such an objective it is difficult for students to know just what they are expected to learn, and it is almost impossible for the teacher to tell whether students have reached the objective at the end of the unit. The unit will have more meaning to student and teacher alike if one of its objectives is, for example, "The student will be able to describe the training required for work in each of six major occupations in the field of horticulture."

Vocational teachers should not concentrate on **skills** objectives to the exclusion of all else. A unit is likely to be a richer learning experience for students if the objectives include some concern for each of the following:

- concepts or "big ideas" related to the topic
- attitudes and values that are to be developed
- mental habits and ways of thinking that are to be introduced or reinforced
- skills and work procedures to be mastered

Not all types of objectives can be given equal emphasis in any one unit. Some units will be more appropriate for emphasizing the development of attitudes, some for skills, others for concepts. However, it is still possible in most units to plan for objectives (and their associated learning experiences) in the cognitive (knowledge), affective (attitudes), and psychomotor (skills) domains.

Not all students may be able to achieve the same objectives or reach the same level of achievement. You can provide somewhat different objectives for slower and more capable learners, and for students with special needs and interests. Individualization of this kind can greatly improve student motivation and enhance individual learning.[4]

You probably will not be able to formulate all the unit's objectives completely as you begin the planning process. Don't become stuck at this stage, but gradually clarify the objectives as the plans for the unit develop.

Selecting Learning Activities

Learning activities are the experiences through which students achieve the objectives of the unit, and in many ways they form the core of an instructional unit. Learning activities must relate directly to the unit objectives and at the same time provide a variety of experiences. They encompass far more than "assignments" for students or lessons to be presented by the teacher, though both these kinds of activities may be included.

In any unit there can be some learning activities that are required of all students, some that are highly recommended, and others that are completely optional. Students can be allowed some flexibility and choice in the learning activities they want to pursue. Consideration should be given not only to the age and educational level of the students, but also to their learning styles, individual interests, career goals, and psychological needs. It may not be possible to provide for all of these factors in every unit, but you should try to select activities that provide for the following—

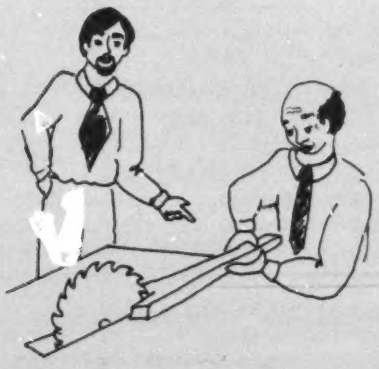
- **Background knowledge and skills.**—Students must have the background knowledge and skills required so they have a reasonable chance of completing the learning activities successfully. If the learning activity requires students to interview business leaders, be sure they know how to conduct an interview, or the experience could be a disasterous one.

- **Practice.**—Students must have an opportunity to **practice** the kind of behavior specified by the objectives. If the objectives call for students to be able to adjust the color convergence on a T.V. receiver, be sure the learning activities include practice in making this

4. To gain skill in individualizing instruction, you may wish to refer to Module C-18, *Individualize Instruction.*

adjustment on actual T.V. sets—not just seeing a film on the subject, or reading about it.

- **Statement of purpose.**—Students must have a perception of the purposes and value of the learning activity. If the teacher can't explain the purposes clearly, perhaps the activity hasn't been well thought out.
- **Element of choice.**—Students should be furnished some choice of learning activities depending on their individual abilities, interests, or previous knowledge.
- **Feedback.**—The learning activities should provide for prompt feedback, knowledge of results, and reinforcement. If students are to solve certain problems or perform experiments as part of their activities, they should be able to find out quickly how well they did, or if their results were correct.



In a competency-based, individualized vocational education program, the teacher's role and function in unit learning activities may be quite different than in traditional programs. The teacher will usually not function very much as a lecturer or a presenter of classroom demonstrations. The teacher's role will be more that of a resource person, making learning diagnoses, providing assistance, asking questions, and making evaluations. The learning activities should not bypass the teacher, but utilize the teacher efficiently in order to gain the most from his or her professional knowledge and experience.

Suggestions for Unit Learning Activities

Sometimes teachers fall into a pattern of using only two or three kinds of learning activities in their instructional plans. They are familiar with these few strategies, know that they usually work, and feel comfortable with them. However, just as a carpenter can't confine himself to using a hammer because he feels comfortable with that tool, or an interior designer can't do all his/her work in shades of blue because he/she likes the color, a teacher can't justify using only one or two teaching techniques because they are familiar and easy. Students may well suffer from being assigned learning activities that are unsuitable for them, lack variety, or are just plain boring.

The following section describes a wide variety of activities that can be used in an instructional unit. These suggestions are not meant to be all-inclusive, but are presented to stimulate your own creative thinking. You can add to this list some activities that are especially effective in your occupational area, then use the list as a reference as you develop plans for instructional units.

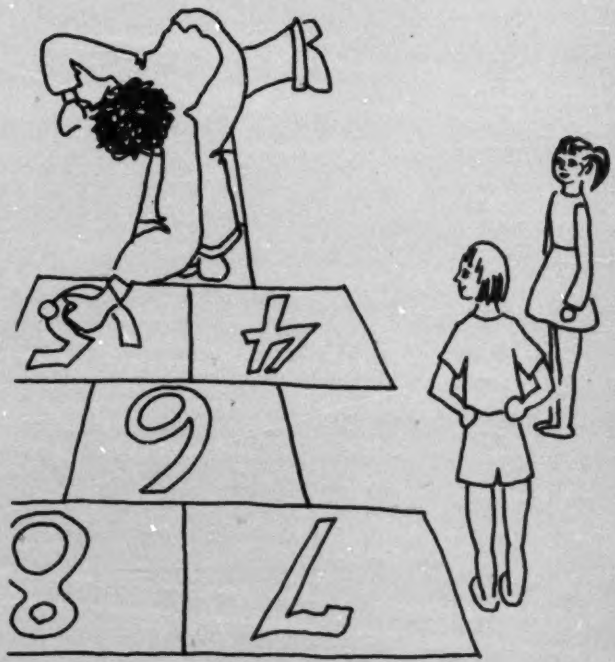
- **Reading parts of a textbook.**—Students can be asked to read short, relevant sections dealing specifically with the knowledge required to reach the objective. This may be a single reference or it may be a number of alternative references from different books.

- **Examining reference books.**—You may have your students examine or gather data from standard reference books of the vocational field (e.g., *Machinery Handbook*, *Graphic Standards*, and *Reference Manual for Office Personnel*).
- **Working in programmed materials.**—Students may complete one or more sections of a programmed text or other programmed material.
- **Reading special materials.**—Students can be referred to materials available in the school library (e.g., books, encyclopedia articles, periodical articles from bound volumes, etc.).
- **Solving practice problems.**—You could have students attempt to solve practice problems in the skills component (e.g., computational problems, exercises, etc.).
- **Viewing or listening to audio or audiovisual materials.**—On a large-group, small-group, or individual basis, students can gain information from media materials (e.g., slide/tapes, audiotapes, films, filmstrips, videotapes, illustrations, etc.).
- **Observing or operating models, mock-ups, or dummy set-ups.**—Working with such objects can help students to gain understandings of mechanisms or operating controls (e.g., plastic mock PBX board, model of a rotary engine, set-up of electrical circuit, practice key board, etc.).
- **Role-playing of performance in a simulated situation.**—Students may take the principal role of the employee or the participating role of the customer, the assistant, the audience, etc. Role-playing activities should be one of the later activities in the students' learning experiences.
- **Participating in real-life performances.**—In these performances, the students function for short periods of time under controlled conditions in an actual work situation, or a situation very close to real (e.g., conducting a story reading time at a child-care center; setting up equipment in a surveying team). These also should be final learning activities.
- **Observing the skilled worker in a real work situation.**—This should be done with specific goals in mind, usually with some form of guide, observation instrument, or report form to give structure and point to the observation period.
- **Videotaping student performance.**—These videotapes can be viewed and used by the student to evaluate and improve his performance.

- **Participating in simulation experiences.**—In simulations, a student goes through a "dry run" of the performance with the conditions controlled and consequences minimized (e.g., working with dummy patient in health care or a model head in cosmetology; disassembling and assembling a non-functioning aircraft engine). Case studies, in which students write their reactions and responses to the given situation, are also considered simulation experiences.
- **Participating in small-group experiences.**—These experiences give students a chance to discuss, plan, or evaluate their work (e.g., discuss results of observations, plan for role-playing sessions, evaluate the instructional value of their activities).
- **Observing an instructor demonstration of an operation.**—There are instructional situations in which the best solution is for the instructor to personally perform an operation and describe it as students observe. This may be done on an individual, small-group, or total class basis.
- **Listening to guest speakers or outside experts.**—These classroom experiences may be scheduled by the teacher at a time when many students are ready for the experience. Usually the nature of the topic is such that the whole group can benefit, even though they may not all be at the same point in their learning.
- **Producing or constructing projects or services.**—These must directly contribute to the objective and therefore must be carefully designed and assigned, be of limited scope, and require a limited amount of time (e.g., do

a complete manicure on a fellow student; construct a W truss; make working drawings of a floating footing; make a skirt with zipper; decorate a cake with icing).

- **Completing problem-solving activities.**—Some objectives may require solving problems involved in given situations. These may be relatively short experiences (e.g., prepare a luncheon menu for a particular group) or quite long-term jobs (e.g., design a vacation cottage for a family of four in a mountain setting). It is very important in problem-solving activities that the student has the required skills, that he has access to the information necessary to solve the problem, and that the problem not go beyond the performance objective.
- **Completing skills practice exercises.**—Some skilled operations may require that the student not only be able to perform them correctly once, but require that the student be able to do them smoothly and flawlessly every time. Learning activities may therefore specify practice periods in terms of time, number of repeated experiences, or quantity of production (e.g., make welds without a rod for two hours; produce ten perfect button holes; take ten minutes of dictation in shorthand).
- **Memorizing information.**—The performance objective may require or suggest that the student can best function if he has committed some information to memory. This is a legitimate learning activity (e.g., memorize the table of metric measures, the Gregg characters, the formula for lathe speeds, a list of technical terms).
- **Collecting objects.**—Some performance objectives may be reached by asking students to gather and collect real objects so as to become familiar with their characteristics, the variety available, the settings in which they may be found (e.g., make a collection of metal fasteners, building materials, local lawn weeds, children's street games, newspaper classified ads).
- **Participating in scaled-down performance.**—If the real performance is large in physical size, complex because of the number of participants, or consumes a quantity of expensive materials, a limited performance or a scaled-down situation may give the student a better chance of gaining confidence or success and may be more instructionally efficient and practical. (Examples of scaled-down experiences are: teach an outdoor game to two children; construct a scale model of a built-up roof construction; lay out an irrigation system



on a land contour model; build a corner of a block wall.)

- **Reading information sheets.**—These will be concise statements of very relevant information specifically prepared for the unit, geared to the students' level, and available from no other convenient source.
- **Performing experiments in the laboratory.**—You can assign the student specific experiments to perform with specified equipment and processes, observe the results, and report or utilize the results in some form.
- **Writing of technical reports, reacting to case studies, preparing reports for class discussion, etc.**—This activity may be particularly valuable in the technical areas.
- **Preparing visual materials.**—Students can be asked to gather information and produce diagrams, schematic drawings, charts, graphs, topographic maps, contour maps, graphic solutions, structural drawings, styling illustrations, layouts, design sketches. Activities of this type are usually interesting to students, add variety to the learning experience, and tend to reinforce learning.
- **Completing planning experiences.**—Performance objectives may require that the student learn how to plan the job or operation. Planning may include selecting or designing the job, developing a sequence of procedures, figuring materials and costs, noting

checkpoints and safety cautions, devising evaluation standards.

- **Completing critique or evaluation experiences.**—In these, the student is asked to rate or evaluate an example of a finished product or service, or to make a critical analysis of a performance of a specified skill. The object of the evaluation may be a sample product, the work of a fellow student, the student's own work, a film or videotape of a performance. The final result may be a completed rating sheet, a written report, or an oral report.
- **Participating in cooperative student experiences.**—Though instruction may be individualized, there are situations when two or more students may work together in a learning experience. Many occupational tasks involve teamwork, and it is proper for the learning activities to incorporate this. Occupational activities that involve heavy lifting, cooperative production techniques, worker interaction, or team problem-solving are places where cooperative student experiences are applicable.

Selecting Evaluation Procedures

An important part of every unit plan is that of planning for student evaluation. Without an evaluation component, you won't know whether the unit was successful or not, whether students know something they didn't know before, or whether they are able to do something they couldn't do at the beginning of the unit. In measuring student achievement and change, you will also be assessing the effectiveness of the unit in meeting its objectives.

The purpose of the evaluation procedure is to determine whether students can now meet the objectives of the unit. In other words, after the instructional unit is completed, can the students perform or behave in the manner called for in the objectives? Evaluation should not be done simply to compare the achievement of one student against another or just to have some data on which to base a grade.[5]

If, for example, one of the unit objectives calls for students to be able to write a letter of application for a job, the unit test should require them to write such a letter, and the teacher should evaluate the results to see how closely their performance meets that called for in the objective. A unit test might consist of one item (as in the above example) or it might require many items to evaluate student performance. A unit on the heat treatment of steel might include a number of items to test students' knowledge of the metal's crystalline structure, the changes produced by changes in temperature, and the skilled performance required to temper a steel object.

Your evaluation procedures should take into consideration the following guidelines:

- **Number of items.**—As you plan for the evaluation procedures keep the objectives in front of you. Prepare only as many items as necessary to find out how well the student is able to meet the objectives.
- **Type of skill.**—Require the same kind of student performance in the evaluation as called for in the objective. If the unit objective describes knowledge of facts or computation of figures, a paper-and-pencil test is probably appropriate. If the objective describes a skilled performance on a machine, a performance test is indicated. An objective that concerns a student attitude should be evaluated by observation of behavior.

5. To gain skill in selecting and developing evaluation procedures for a unit, you may wish to refer to Module D-2, *Assess Student Performance: Knowledge*; Module D-3, *Assess Student Performance: Attitudes*; and/or Module D-4, *Assess Student Performance: Skills*.

- **Objectivity.**—Try to make the evaluation process as objective and free from judgment or bias as possible. Use objective tests, model answers, rating scales, and performance checklists to help you make the evaluation fair and understandable to your students.

If the evaluation procedures show that the great majority of students in the class were able to achieve the objectives of the unit, it can be considered generally successful. Of course, this assumes that the objectives are valid and that the students did not already possess the competencies before the unit was begun. Immediately after the class has completed the work of the unit, you should review your unit plans and revise them as necessary for future use. Learning activities that proved impractical or unhelpful should be revised or discarded. Objectives found to be unrealistic should be rethought. References and resources discovered during the progress of the unit can be added to the bibliography. Information on which to base the revision of the unit plan can be gathered from student evaluation results, from observation of students during the work of the unit, and from class discussion at the close of the unit. Thus, each school year the instructional units will be strengthened, and new ones can be added to the program.

For further information on the subject of student performance objectives and learning experiences, you may wish to read Mager and Beach, *Developing Vocational Instruction*, pp. 44–58. This stimulating little book contains a great many ideas that vocational teachers will find helpful.

Activity

The following items check your comprehension of the material in the information sheet, Developing the Content of an Instructional Unit, pp. 24–30. Each of the three items requires a short essay-type response. Please explain fully, but briefly, and make sure you respond to all parts of each item.

SELF-CHECK

1. Using the knowledge that you have about student performance objectives, develop a short checklist of perhaps five to ten items that you could use to evaluate the objectives in your own unit plans. An example of a checklist format that you may wish to use follows.

The objectives of the unit:	Achieved	Needs Work	Not Achieved	Not Applicable
1. are based on an analysis of the occupational requirements	☐	☐	☐	☐

2. Ms. Goldie Fawcett, teacher of vocational home economics, has finished planning a unit of instruction on "Purchasing Electrical Appliances for the Home." Her plans include the following student learning activities:

   a. Read Chapter IV in the text.
   b. Listen to teacher presentations:
      1. What to look for in buying a refrigerator.
      2. What to look for in buying a kitchen range.
      3. What to look for in buying a washer and dryer.
   c. View the film, "Home Repairs of Small Appliances."
   d. Read any two articles on selecting appliances in *Consumer Reports*.
   e. Read the information sheet, Financing Appliance Purchases; then answer the questions at the end of the sheet.

   Critique Ms. Fawcett's plans for the learning activities.

3. Mr. Zink Primer was a bit unhappy. His class in auto body repair had just finished a unit of "Safety Laws and Regulations Pertaining to Auto Painting Materials and Processes." As a final unit test he had given a 30-item exam composed of true-false, matching, and completion items on the laws and regulations, and every single student had gotten a high score. He had just read a book on classroom testing that said that given a well-designed test, about 12 percent of a typical class will fail. Mr. Primer didn't know whether it was the exam or the unit that was too easy.

   Do you think this was the right kind of evaluation technique for this unit? What should Mr. Primer do about the fact that everybody passed the test?

   Explain your response.

Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same **major** points.

MODEL ANSWERS

1. There are a number of forms that a checklist for unit objectives could take. The important thing is that the essential processes and characteristics are included. Sample checklist items that a teacher might use follow:

   The objectives of the unit:

   1. are based on an analysis of the occupational requirements
   2. are based on students' personal needs
   3. were developed using student input and involvement
   4. are stated in terms of student behaviors or performance
   5. provide for individual differences in abilities and occupational goals
   6. allow the teacher to make an objective (rather than subjective) assessment of student achievement
   7. are known to students in advance of instruction
   8. are feasible and practical for the facilities and teaching situation

2. Without knowing the performance objectives, we can't be too specific, but it would appear that Ms. Fawcett has difficulty selecting student learning activities. In general, the learning activities aren't very active. The students are asked to passively **read, view,** and **listen.** Of course there might be class discussion after the lessons, but Ms. Fawcett should remember that students learn more effectively when they are actively engaged in the process.

   Related to this is the fact that the learning activities lack variety. There are basically only two kinds of things being done in this unit—yet there could be so much more. Students with a variety of learning styles and abilities could benefit from activities such as presenting technical reports, developing buying guidelines, problem solving, or individual field trips. There appear to be some large gaps in coverage of various home appliances too.

   It is hard to see how the film on appliance repair fits into a unit on purchasing. Perhaps the film was just conveniently available, or it seemed worthwhile, but there was no other unit in which to include it. Ms. Fawcett needs to keep the unit objectives clearly in mind when selecting activities.

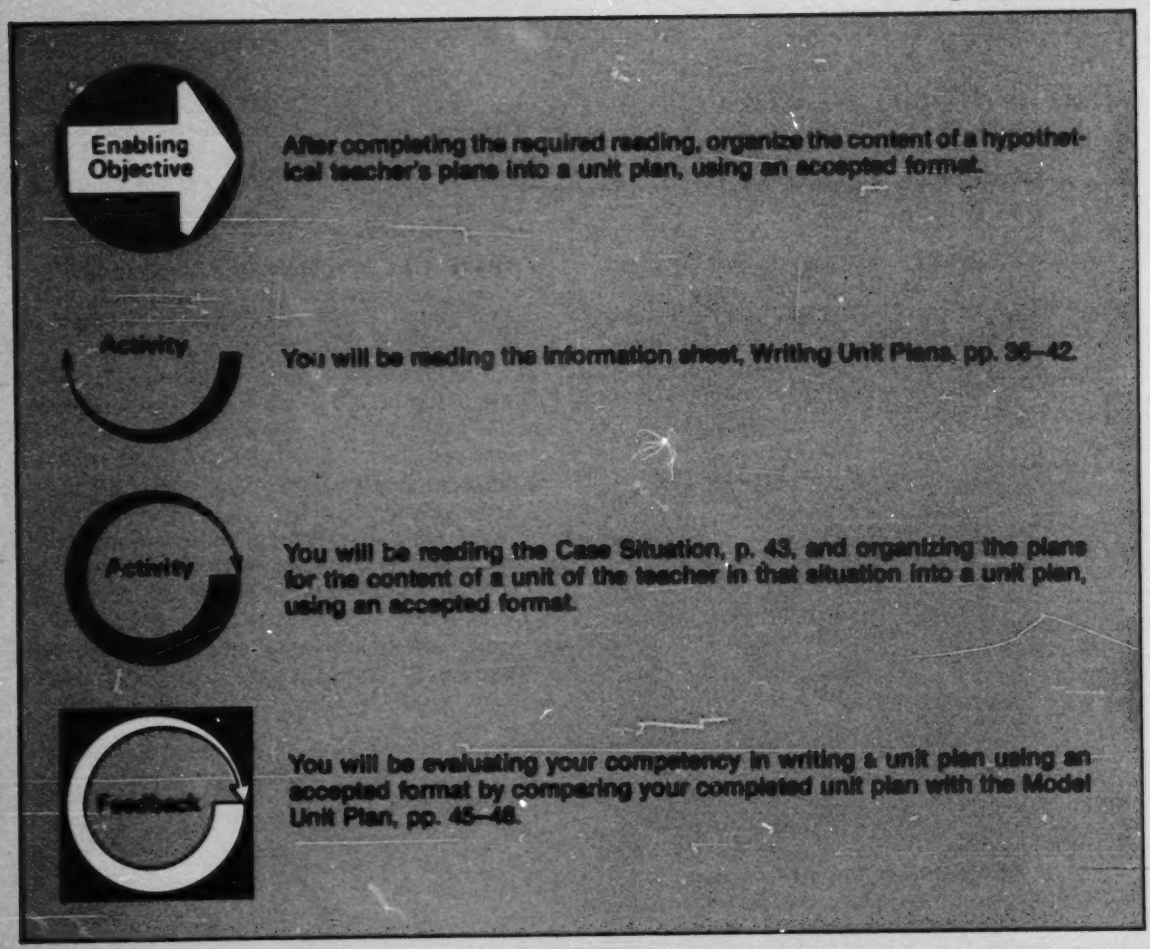
3. Mr. Primer seems to be a conscientious teacher, so we can assume his test items were derived directly from the unit objectives and were well constructed. If so, then the paper-and-pencil test was an appropriate evaluation procedure. Knowledge of laws and regulations is cognitive in nature, so student achievement can be determined rather well by an objective test. If the unit objectives had involved a manipulative skill (e.g., ability to adjust a spray gun nozzle for various types of spray paints), then evaluation would best be done by an actual performance test of the skill.

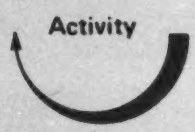
   It may be that Mr. Primer is wrongly concerned about the results of the unit test. To be sure, he should reexamine the test to be sure it examines all phases of the objectives and that the level of knowledge is that required of beginning workers in the occupation. If he has an idea that the students already knew the safety laws before the unit began (though that seems unlikely in this class), Mr. Primer could administer a pretest before presenting the unit to next semester's group. Probably Mr. Primer should feel very gratified that the unit had functioned so well that everyone in the class achieved the objectives and learned what was required. Indeed, if 12 percent had failed, Mr. Primer would then have something to worry about.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same **major** points as the model responses. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Developing the Content of an Instructional Unit, pp. 24–30, or check with your resource person if necessary.

Learning Experience III

OVERVIEW


Enabling Objective
After completing the required reading, organize the content of a hypothetical teacher's plans into a unit plan, using an accepted format.
Activity
You will be reading the information sheet, Writing Unit Plans, pp. 36–42.
Activity
You will be reading the Case Situation, p. 43, and organizing the plans for the content of a unit of the teacher in that situation into a unit plan, using an accepted format.
Feedback
You will be evaluating your competency in writing a unit plan using an accepted format by comparing your completed unit plan with the Model Unit Plan, pp. 45–48.



This information sheet is specifically concerned with the written unit plan. Read it to learn what should be included in the plan and how to organize the plan using an efficient format.

WRITING UNIT PLANS

Preparing the Unit Plan

Ideas and plans for a unit of work must not be left as vague notions and mental notes; they must be written down in some form that will give them substance and organization. The written document, or format, in which you describe your ideas for the unit is called a **unit plan.** It need not be an elaborate production, but it does need to be complete, thoroughly structured, and clearly written. You will use this plan to prepare for the lessons in the unit, to help you collect the resource materials, to organize the learning activities, and to construct the evaluation situations.

There is no **one best** format or structure for developing a unit plan. Most teachers eventually settle on a format that works best for them and includes the kind of information their needs require. The content and arrangement of the unit plan will vary depending on the requirements of the occupational area, the teaching style of the teacher, the needs of the students, and perhaps the policies of the school. There are, however, certain basic components or elements that should probably appear in every unit plan, though they may have slightly different names and be given somewhat varying degrees of emphasis. A brief description of each unit plan element follows.

- **The title of the unit.**—The title should be stated clearly and briefly.
- **An overview (or introduction) of the unit.**—This describes the general scope of the unit, the significance of the topic, and/or a statement of purpose or rationale.
- **Student performance objectives.**—Each of the objectives for the unit should be stated in terms of what the students are expected to be able to do at the completion of the unit.
- **An outline of the contents of the unit.**—This outline should be very much condensed. As the lessons or activities of the unit are developed, the content outline will be expanded.
- **Student learning activities.**—This is a list of the activities that will enable the student to reach the objectives, including the lessons to be given by the teacher. Detailed directions for each activity will need to be developed separately.
- **Culminating activities and evaluation procedures.**—This describes in broad terms what kinds of measurement techniques or

devices (performance test, objective test, teacher evaluation of a project, etc.) will be used to find out how closely each student's performance matches the objectives.

- **Instructional resource materials and/or bibliography.**—This section may include lists of books, films or filmstrips, reference sheets, speakers, or any other resource needed for the unit. They may be for the use of the students and/or the teacher.
- **Special notes.**—In this section, the teacher can note items that are unusual or peculiar to the unit. For example, project supplies required, special equipment, safety precautions, and so forth.

Two suggested formats for unit plans are presented in Samples 2 and 3 and an example of a completed unit plan appears in Sample 4. The space for each section can, of course, be expanded according to the amount of information to be included. You don't make instructional plans to fit a piece of paper, but to fit the needs of the students and yourself as teacher.

SAMPLE 2

FORMAT FOR A UNIT PLAN

UNIT PLAN

Unit Title _____

Subject _____ Teacher _____

School _____

I. Overview:

II. Topics to be Covered:

1.
2.
3.
etc.

III. Student Performance Objectives:

1.
2.
3.
etc.

IV. Student Learning Activities Required Resources

1.
2.
3.
etc.

V. Student Evaluation:

VI. Resource Materials:

SAMPLE 3

FORMAT FOR A UNIT PLAN

UNIT PLAN

Subject _____ School _____ Teacher _____

Unit Topic _____

Overview _____

Student Performance Objectives	Content	Learning Activities	Resources	Evaluation

SAMPLE 4

COMPLETED UNIT PLAN

Unit Topic: Alternatives to the Gasoline Piston Engine for Automobiles

Subject: Auto Mechanics II **Teacher:** Nikolous Otto

School: Wheeling Vocational School

I. Overview:

The energy crisis and the concern about environmental pollution has spurred renewed interest in finding an alternative to the conventional automobile engine. Auto mechanics need to know principles of operation and the characteristics of the engines that may be the powerplants of the near future.

II. Topics to be Covered:

The following six types of powerplants will be studied:
I. diesel; II. Wankel; III. Stirling; IV. Steam; V. electric; VI. gas turbine

The following topics will be used to study each of the above powerplants:
A. Basic principles of operation
B. Major working parts
C. Characteristics: advantages and disadvantages for automotive application
D. Present status and future development

III. Student Performance Objectives:

The student will be able to—
1. draw a simple technical sketch of the mechanical layout of each of the six alternative powerplants
2. orally explain the basic principles of operation of each
3. pass an objective test on the primary advantages and disadvantages of each for automotive use
4. define the technical terms new to these engines

IV. Student Learning Activities	Required Resources
Listen to teacher presentation on the need to investigate new powerplants. Participate in class discussion.	Handout: article by L. Head, "Is the Piston Engine Obsolete?"
Read Chapter 21 in text.	Text: Rack & Pinion, "Automotive Mechanics"
Participate in small group [illegible] to prepare a 15 minute class presentation on one of the engine types.	Handout: bibliography for the unit.
Participate in the group's presentation to the class.	Audio-visual equipment as required. Handout: Presentation Checklist.
On graph paper, draw technical sketch of each engine.	Graph paper, soft pencils.
Inspect the scale model of the Wankel engine.	Plastic model of Wankel engine

(Optional) Prepare a diagram of an engine, to be made into an overhead transparency. Use drafting room.

(Optional) Collect brochures, articles, and road-test reports on cars having these engines.

V. **Student Evaluation:**

Test on engine configurations: Incomplete drawings of engines, students to complete, label major parts, and draw gas flow.

Engine principles: Oral questions given in class, students' responses evaluated by teacher (Rating scale: Excellent, Satisfactory, Unsatisfactory).

Group presentation will be evaluated using an evaluation checklist (furnished to the class at the time of assignment).

VI. **Resource Materials:**

Books: O. H. Kamm, Modern Automobile Engines, 1973.

Films & Filmstrips: Rudolph Diesel Corp., "Diesel Engines for Automobiles."
Eccentric Motor Corp., "The Rotary Engine."

Transparencies for "Automotive Mechanics."

Articles: L. Head, "Is the Piston Engine Obsolete?" Motor World, August, 1975.
R. Nadir, "Waste, Pollution, and the Automobile," Current Problems, December, 1974.
Tony Venturi, "New Interest in an Old Engine . . . The Stirling Cycle," Autobus, February, 1975.
"Mr. Lear and His Wonderful Steam Engine," Amateur Mechanics, October, 1974.
"Two Electric Cars," Consumer Reports, October, 1975.

In addition to those already mentioned, there are several other kinds of written plans that may be helpful in certain circumstances. As you write the unit plan, review the following items and decide whether or not you need to work out any of these supporting plans.

- **Contingency plans.**—Even the most careful plans for learning activities may go awry. Field trips may not work out, films may be delayed in the mail, and resource people may get sick. It is wise to have some plans for alternative activities that will cover much the same ground and that can be put into operation quickly. Do not rely on spur-of-the-moment ideas or busywork to keep students occupied.
- **Logistic plans.**—Some units in vocational education may be rather complex to manage. You may need to make plans to see that students, materials, time, and space are all available just when they are needed.
  - Film orders must be placed well in advance.
  - Students may need to be pre-assigned to working groups.
  - Space for large-scale activities may need to be reserved.
  - Extra time for laboratory work or special blocks of time may need to be arranged.
- **Time table.**—Beginning teachers, especially, have trouble keeping the classwork moving according to plan and on schedule. It may be very valuable to make a condensed schedule of what is supposed to take place during each day of the unit. Another "mini-schedule" can be drawn up to show the activities that will occur minute by minute during a three-hour block of class time. Particularly during the introductory phase of the unit, a mini-schedule may turn out to be a lifesaver in helping to avoid confusion and chaos.
- **Introductory lesson.**—Every lesson should be well planned, of course, but the introduction to the unit is critical and should be planned with special care. This is the time when you want students to grasp the nature and scope of the unit, understand how the lesson relates to previous lessons, and become motivated to begin the learning activities. Some beginning teachers go beyond the preparation of an outline lesson plan and actually write a script. This sounds like a lot of work, and it is, but it can result in a very high quality introductory lesson. Of course, the script must not be read to the class or memorized and delivered in rote fashion.

The following Case Situation describes the plans made by Mr. Ernest Early, a vocational teacher, for a unit of instruction. Read the Case Situation, and using an accepted unit plan format (either one of those on pp. 38–41, or one approved by your resource person), organize Mr. Early's plans for topics, objectives, learning activities, resources, and evaluation procedures into a written unit plan.

CASE SITUATION

Mr. Ernest Early was writing down some ideas for the new unit his class was to begin in two weeks or so. The topic was becoming clear in his mind as he worked, though the title wasn't finally chosen yet. It would have to do with dealing with customers, customer relations, and handling customer requests and complaints. He knew that once on the job, an important factor in his students' success would be how skilled they were in dealing with customers and meeting their needs.

Mr. Early wanted his students, when they had finished the unit, to realize how important that part of their work would be and how they could use their own personalities to best advantage. They should know the basic principles of psychology on which good customer relations could be based. Above all, thought Mr. Early, they should actually be able to handle customers in typical occupational situations. He didn't expect them to be as skilled as someone who had been in the business a long time, but as beginning workers they should be able to handle routine requests and complaints to the customers' and supervisor's satisfaction.

Mr. Early jotted down some notes on items that should be covered in the unit. The importance of good customer relations, the nature of the typical customer, the job requirements of beginning workers in dealing with customers, and the basic psychology of customer-worker relations were first on his list. Then he listed some more specific items: general appearance and manners expected of the worker by customers, worker behaviors that please and reassure customers, and behaviors that antagonize customers. Finally, he thought, the unit should put it all together and show students how to conduct themselves in a typical situation. The course textbook was pretty general on this topic, but by reading Chapter 4 the students should at least get a good introduction.

Mr. Early decided he could strengthen the unit by giving class presentations on the psychology of customer-worker relations and on desirable and undesirable worker behaviors. Then he had a great idea . . . his friend, the personnel manager of a local firm, could talk to the class about customer relations and what the firm expected their workers to be able to do, and the class could ask questions afterward.

There was also a good videotape in the library called, "People Awareness" that was right on the topic and that students could view individually when they were ready for it. Another individual activity would be for students to critique the case studies that he had worked out last semester. Last semester's role-playing activity had been very successful, and he could even improve it this time. At first he would take the part of the worker with a student as customer; then, when the students began to understand the techniques, they would switch roles.

It wasn't going to be easy to make a good test at the end of this unit, thought Mr. Early. Of course the basic principles and psychological theory could be taken care of in an objective test . . . perhaps about 25 items. But what to do about their attitudes toward customers? Hey! Why not give that attitude test he found in the college text . . . first as a pretest before the unit, and then as a post-test to determine how much their attitude had changed in the desired direction! For the performance part, Mr. Early decided he could observe each student dealing with a typical customer (another student) using a checklist of the desired behaviors. He told himself to remember to give each student a copy of the checklist at the beginning of the unit.

Well, the unit was shaping up very nicely. Now to get it down on paper in a systematic form. Mr. Early sharpened a couple of pencils and earnestly got to work.

NOTES

Compare your completed unit plan with the Model Unit Plan given below. You may have used a somewhat different unit plan format, but all the essential components of a unit plan should be included, and all the teacher's ideas should appear in the plan.

MODEL UNIT PLAN

SUBJECT Vocational Education **SCHOOL** Main-Chance Vocational **TEACHER** Ernest Early

UNIT TOPIC Deal with Customers, Handle Routine Requests and Complaints.

OVERVIEW According to occupational analyses, beginning workers in this field will be in contact with the public and will frequently be dealing directly with customers. This unit is designed to provide students with a knowledge of the principles on which customer relations are based. A student successfully completing this unit will be competent in the skills needed to work with customers in routine situations.

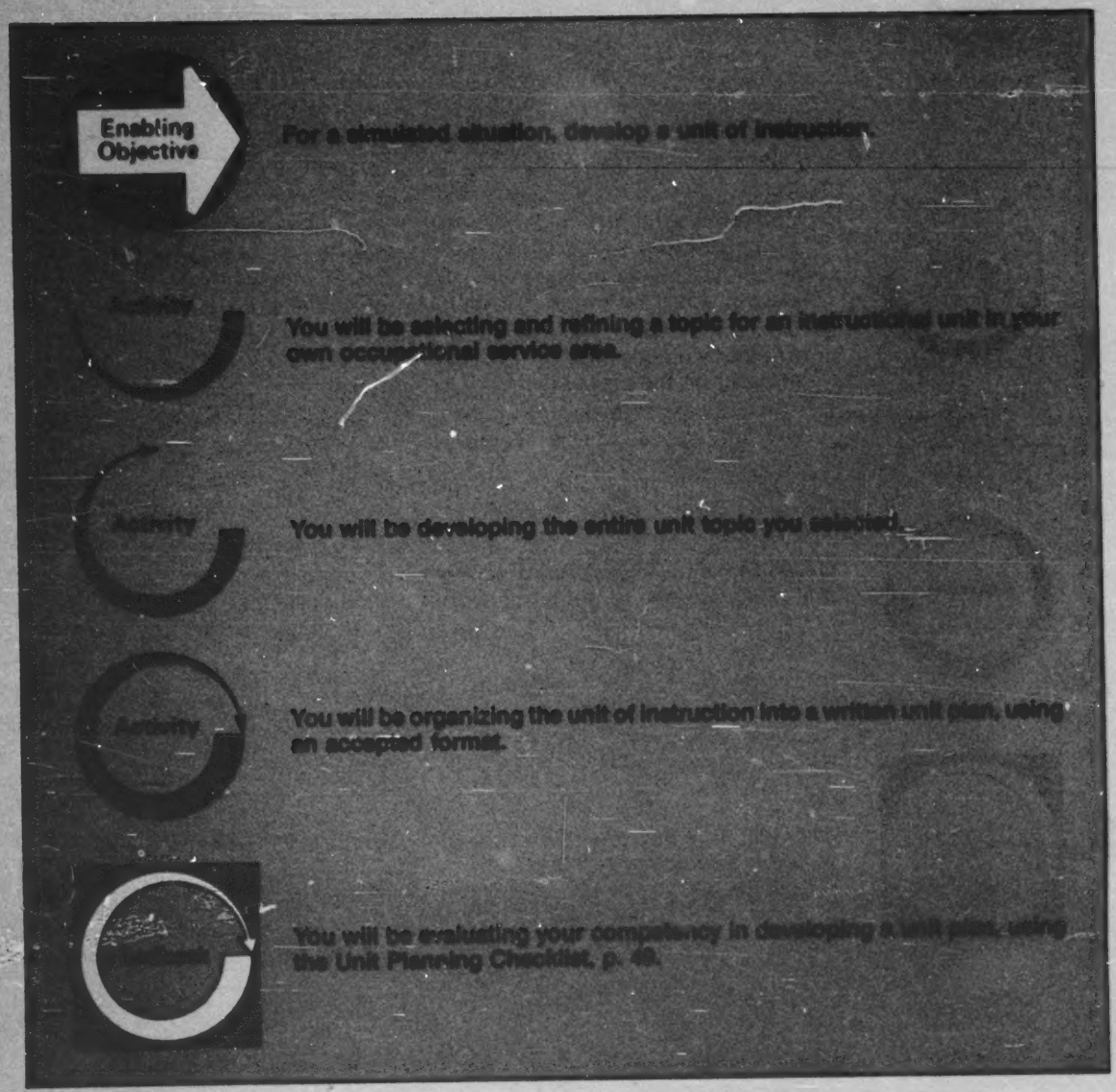
Student Performance Objectives	Content	Learning Activities	Resources	Evaluation
The student will be able to:	Introduction to consumer relations	Listen to introductory lesson by the teacher.		Pretest and post-test: Occupational Attitude test, No. 17
demonstrate a positive attitude toward customers and toward the work of dealing with them.	Importance of good customer relations.	Read Chapter 4 in the text	Course textbook	
	The need to develop personal competence in this area.	Listen to presentation by personnel manager	Personnel manager of Stiles and Workman, Inc.	
	Job requirements in customer skills.	Participate in class presentations		
pass (80%) a 25 item objective test on the basic psychological principles of customer relations.	Value of knowledge of psychology when dealing with customers.	Listen to teacher presentations on psychological bases and practical applications.		Teacher-made test: 25 item objective exam developed from presentations and videotape on basic principles
	Nature of typical customers.	Participate in class discussions.		
	View videotape "People Awareness"... respond to taped questions.	Videotape "People Awareness" Videotape playback unit		
	The psychological needs of the customer.			
	Problem customers			
	Examples of Applications			

Student Performance Objectives	Content	Learning Activities	Resources	Evaluation
demonstrate competence (in a simulated situation) in techniques of dealing with customers in routine business situations. The level of performance should be that expected of beginning workers.	Appearance and dress requirements of the occupation. Manners expected of workers. Techniques and behaviors in dealing with customers. Undesirable behaviors Handling routine customer situations: Requests and complaints	Listen to teacher presentation on techniques for dealing with customers. Participate in class discussion. Critique the given case studies of customer relations situations. Participate in role-playing of customer and worker (participate in both roles).	Case study sheets with model answers Handouts describing role-play situations.	Student performance of customer relations competencies, evaluated by checklist.

LEVEL OF PERFORMANCE: Your completed unit plan should have included all the components and elements indicated in the Model Unit Plan. If you missed some points or have questions about the form of your unit plan, review the material in the information sheet, Writing Unit Plans, pp. 36–42, or check with your resource person if necessary.

Learning Experience IV

OVERVIEW


Enabling Objective
For a simulated situation, develop a unit of instruction.
You will be selecting and refining a topic for an instructional unit in your own occupational service area.
You will be developing the entire unit topic you selected.
You will be organizing the unit of instruction into a written unit plan, using an accepted format.
You will be evaluating your competency in developing a unit plan, using the Unit Planning Checklist, p. 49.

From your own occupational service area, select a topic appropriate for an instructional unit. Refine the topic to be suitable for students typical of those usually enrolled for this vocational program in age, educational background, and career goals. Consult courses of study or curriculum guides for your occupational area to aid you in selecting a unit topic that is based on the appropriate contents and objectives of the program.

Develop the entire unit topic you selected. You should complete the following steps in planning the unit:

1. Develop one or more student performance objectives for the unit.
2. Construct a summary outline of the subject matter contents of the unit.
3. Select or devise a series of student learning activities designed to help students achieve the unit objectives. These may include classroom lessons, laboratory work, projects, or individual study assignments.
4. Select the evaluation procedures that are designed to determine whether students have achieved the objectives of the unit. Be prepared to describe the procedures clearly—not just that you plan a "test."
5. Prepare a list of resources for the unit, including those for student use and for your use as the teacher.

Organize the plans you have made for the instructional unit into a written unit plan. Use one of the formats from this module, from the vocational education literature, or one suggested by your resource person.

After you have developed your unit plan, use the Unit Planning Checklist, p. 49, to evaluate your work.

UNIT PLANNING CHECKLIST

Directions: Place an X in the NO, PARTIAL, or FULL box to indicate that each of the following performance components was not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

NAME _____

DATE _____

RESOURCE PERSON _____

LEVEL OF PERFORMANCE

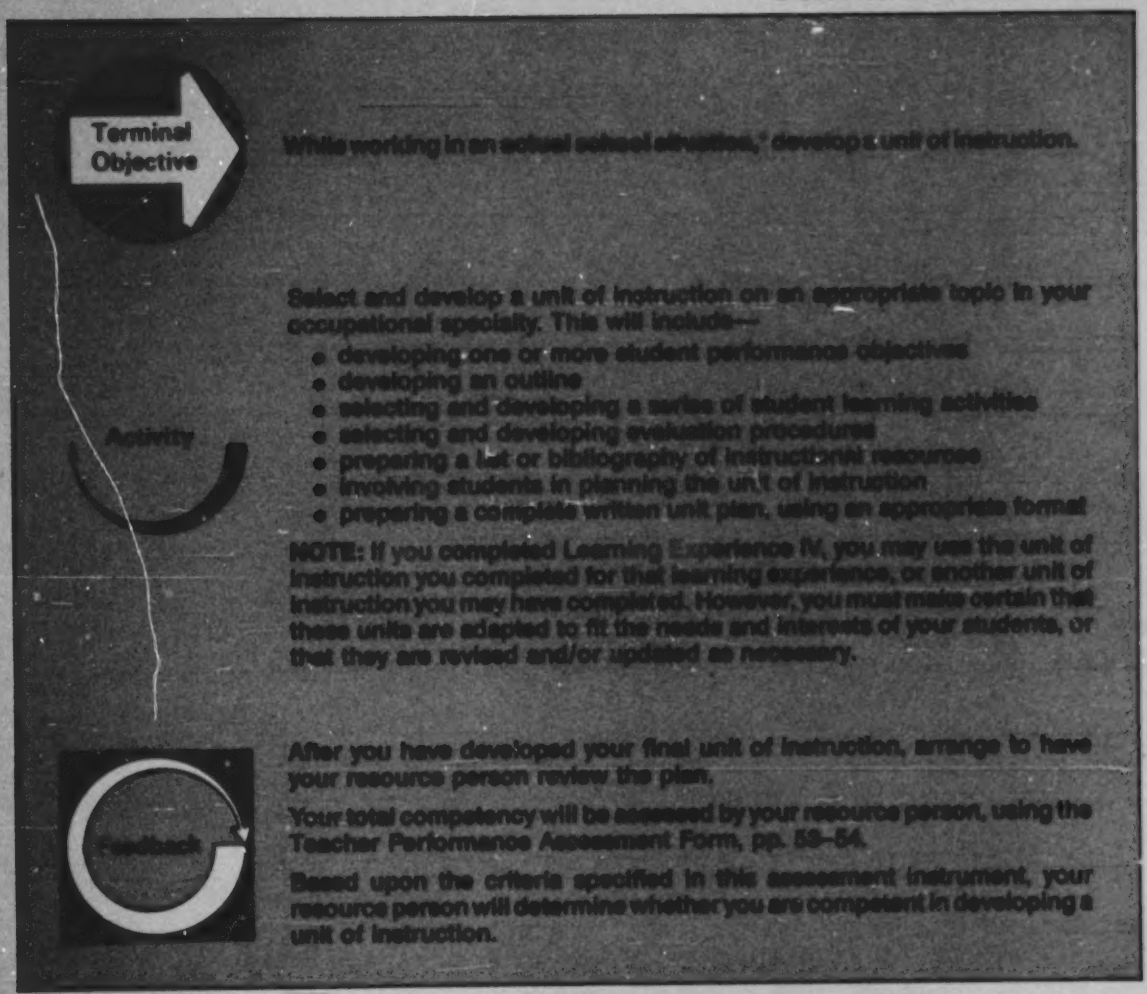
	N/A	No	Partial	Full
In developing the plan, you				
1. consulted curriculum guides and courses of study in the vocational service area for appropriate topics and content	☐	☐	☐	☐
2. selected a topic which	☐	☐	☐	☐
a. is relevant to students	☐	☐	☐	☐
b. is significant	☐	☐	☐	☐
c. has a focus or continuity	☐	☐	☐	☐
The objective(s) as stated in the unit plan:				
3. are stated in terms of student behaviors or performances	☐	☐	☐	☐
4. provide for individual differences in student abilities	☐	☐	☐	☐
The instructional content outlined in the plan:				
5. is correlated with the student performance objectives of the unit	☐	☐	☐	☐
6. provides a variety of difficulty levels	☐	☐	☐	☐
The student learning activities in the plan:				
7. are based upon the student performance objective(s) of the unit	☐	☐	☐	☐
8. are varied, to provide for a wide range of student interest, ability, and learning styles	☐	☐	☐	☐
9. provide for student practice and application of the requisite performances	☐	☐	☐	☐
The evaluation procedures specified in the unit plan:				
10. are directly based on the objective(s)	☐	☐	☐	☐
11. require the same kinds of student performance as called for in the objective(s)	☐	☐	☐	☐
12. use techniques to gather data that depend as little as possible on the judgment, opinion, or attitude of the teacher	☐	☐	☐	☐

LEVEL OF PERFORMANCE: All items must receive FULL, or N/A responses. If any item receives a NO, or PARTIAL response, revise your plan accordingly, or check with your resource person if necessary.

NOTES

Learning Experience V

FINAL EXPERIENCE


Terminal Objective
While working in an actual school situation,* develop a unit of instruction.
Activity
Select and develop a unit of instruction on an appropriate topic in your occupational specialty. This will include—
• developing one or more student performance objectives
• developing an outline
• selecting and developing a series of student learning activities
• selecting and developing evaluation procedures
• preparing a list or bibliography of instructional resources
• involving students in planning the unit of instruction
• preparing a complete written unit plan, using an appropriate format
NOTE: If you completed Learning Experience IV, you may use the unit of instruction you completed for that learning experience, or another unit of instruction you may have completed. However, you must make certain that these units are adapted to fit the needs and interests of your students, or that they are revised and/or updated as necessary.
Feedback
After you have developed your final unit of instruction, arrange to have your resource person review the plan.
Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 53–54.
Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in developing a unit of instruction.

*For a definition of "actual school situation," see the inside back cover.

NOTES

TEACHER PERFORMANCE ASSESSMENT FORM

Develop a Unit Plan (B–3)

NAME _____

DATE _____

RESOURCE PERSON _____

Directions: Indicate the level of the teacher's accomplishment by placing an X in the appropriate box under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

LEVEL OF PERFORMANCE

	N/A	None	Poor	Fair	Good	Excellent
In developing the unit plan the teacher:						
1. included all essential components of a unit plan (title, overview, objectives, content or topics, learning activities, resources, evaluation procedures)	☐	☐	☐	☐	☐	☐
2. involved students in the formative and/or refinement stage of the planning process	☐	☐	☐	☐	☐	☐
3. included resource materials designed to stimulate student interest	☐	☐	☐	☐	☐	☐
4. consulted curriculum guides and courses of study for the program	☐	☐	☐	☐	☐	☐
5. selected the topic after reviewing its relevance to students, its significance, and its feasibility	☐	☐	☐	☐	☐	☐
6. prepared by reading and becoming immersed in the topic	☐	☐	☐	☐	☐	☐
The objectives of the unit as stated in the unit plan:						
7. are based on an analysis of student needs and/or occupational requirements	☐	☐	☐	☐	☐	☐
8. are stated in terms of student behaviors	☐	☐	☐	☐	☐	☐
9. provide for individual differences in student abilities and occupational goals	☐	☐	☐	☐	☐	☐
10. provide for objective assessment of student achievement	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
The instructional content outlined in the unit plan:						
11. is correlated with the student performance objectives for the unit	☐	☐	☐	☐	☐	☐
12. is based on the course of study for the vocational program	☐	☐	☐	☐	☐	☐
13. is significant and relevant to the students	☐	☐	☐	☐	☐	☐
14. is of a scope and depth required of the objectives	☐	☐	☐	☐	☐	☐
15. provides for a variety of difficulty levels	☐	☐	☐	☐	☐	☐
The student learning activities included in the unit plan:						
16. are based upon the student performance objectives of the unit	☐	☐	☐	☐	☐	☐
17. are designed to encourage students to become actively involved in the learning process	☐	☐	☐	☐	☐	☐
18. are varied, to provide for a wide range of student interest, ability, and learning styles	☐	☐	☐	☐	☐	☐
19. are appropriate to the maturity and educational level of the students	☐	☐	☐	☐	☐	☐
20. provide for student practice and application of the performance of the unit	☐	☐	☐	☐	☐	☐
21. provide prompt feedback and reinforcement of student performance	☐	☐	☐	☐	☐	☐
22. are practical and feasible for the specific vocational program	☐	☐	☐	☐	☐	☐
The evaluation procedures specified in the unit plan:						
23. collect evaluation data that are objective in nature	☐	☐	☐	☐	☐	☐
24. are drawn directly from the objectives of the unit	☐	☐	☐	☐	☐	☐
25. require the same basic student performance as required in the objectives of the unit	☐	☐	☐	☐	☐	☐
26. are designed to assess the terminal level of performance of the student	☐	☐	☐	☐	☐	☐
27. used criteria of performance based on entry-level employment	☐	☐	☐	☐	☐	☐

LEVEL OF PERFORMANCE: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the teacher and resource person should meet to determine what additional activities the teacher needs to complete in order to reach competency in the weak areas.

NOTES

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ABOUT USING THE CENTER'S PBTE MODULES

Organization

Each module is designed to help you gain competency in a particular skill area considered important to teaching success. A module is made up of a series of learning experiences, some providing background information, some providing practice experiences, and others combining these two functions. Completing these experiences should **enable** you to achieve the **terminal** objective in the final learning experience. The final experience in each module always requires you to demonstrate the skill in an actual school situation when you are an intern, a student teacher, or an inservice teacher.

Procedures

Modules are designed to allow you to individualize your teacher education program. You need to take only those modules covering skills which you do not already possess. Similarly, you need not complete any learning experience within a module if you already have the skill needed to complete it. Therefore, before taking any module, you should carefully review (1) the Introduction, (2) the Objectives listed on p. 4, (3) the Overviews preceding each learning experience, and (4) the Final Experience. After comparing your present needs and competencies with the information you have read in these sections, you should be ready to make one of the following decisions:

- that you do not have the competencies indicated, and should complete the entire module
- that you are competent in one or more of the enabling objectives leading to the final learning experience, and thus can omit that (those) learning experience(s)
- that you are already competent in this area, and ready to complete the final learning experience in order to "test out"
- that the module is inappropriate to your needs at this time

When you are ready to take the final learning experience and have access to an actual school situation, make the necessary arrangements with your resource person. If you do not complete the final experience successfully, meet with your resource person and arrange (1) to repeat the experience, or (2) complete (or review) previous sections of the module or other related activities suggested by your resource person before attempting to repeat the final experience.

Options for recycling are also available in each of the learning experiences preceding the final experience. Any time you do not meet the minimum level of performance required to meet an objective, you and your resource person may meet to select activities to help you reach competency. This could involve (1) completing parts of the module previously skipped; (2) repeating activities; (3) reading supplementary resources or completing additional activities suggested by the resource person; (4) designing your own learning experience; or (5) completing some other activity suggested by you or your resource person.

Terminology

Actual School Situation . . . refers to a situation in which you are actually working with, and responsible for, secondary or post-secondary vocational students in a real school. An intern, a student teacher, or an in-service teacher would be functioning in an actual school situation. If you do not have access to an actual school situation when you are taking the module, you can complete the module up to the final learning experience. You would then do the final learning experience later; i.e., when you have access to an actual school situation.

Alternate Activity or Feedback . . . refers to an item or feedback device which may **substitute** for required items which, due to special circumstances, you are unable to complete.

Occupational Specialty . . . refers to a specific area of preparation within a vocational service area (e.g., the service area Trade and Industrial Education includes occupational specialties such as automobile mechanics, welding, and electricity).

Optional Activity or Feedback . . . refers to an item which is not required, but which is designed to **supplement** and enrich the required items in a learning experience.

Resource Person . . . refers to the person in charge of your educational program; the professor, instructor, administrator, supervisor, or cooperating/supervising/classroom teacher who is guiding you in taking this module.

Student . . . refers to the person who is enrolled and receiving instruction in a secondary or post-secondary educational institution.

Vocational Service Area . . . refers to a major vocational field: agricultural education, business and office education, distributive education, health occupations education, home economics education, industrial arts education, technical education, or trade and industrial education.

You or the Teacher . . . refers to the person who is taking the module.

Levels of Performance for Final Assessment

N/A . . . The criterion was not met because it was **not applicable** to the situation.
None . . . **No attempt** was made to meet the criterion, although it was relevent.
Poor . . . The teacher is unable to perform this skill or has only **very limited ability** to perform it.
Fair . . . The teacher is unable to perform this skill in an acceptable manner, but has **some ability** to perform it.
Good . . . The teacher is able to perform this skill in an **effective** manner.
Excellent . . . The teacher is able to perform this skill in a **very effective** manner.

Titles of The Center's Performance-Based Teacher Education Modules

Category A: Program Planning, Development, and Evaluation

- A-1 Prepare for a Community Survey
- A-2 Conduct a Community Survey
- A-3 Report the Findings of a Community Survey
- A-4 Organize an Occupational Advisory Committee
- A-5 Maintain an Occupational Advisory Committee
- A-6 Develop Program Goals and Objectives
- A-7 Conduct an Occupational Analysis
- A-8 Develop a Course of Study
- A-9 Develop Long-Range Program Plans
- A-10 Conduct a Student Follow-Up Study
- A-11 Evaluate Your Vocational Program

Category B: Instructional Planning

- B-1 Determine Needs and Interests of Students
- B-2 Develop Student Performance Objectives
- B-3 Develop a Unit of Instruction
- B-4 Develop a Lesson Plan
- B-5 Select Student Instructional Materials
- B-6 Prepare Teacher-Made Instructional Materials

Category C: Instructional Execution

- C-1 Direct Field Trips
- C-2 Conduct Group Discussions, Panel Discussions, and Symposiums
- C-3 Employ Brainstorming, Buzz Group, and Question Box Techniques
- C-4 Direct Students in Instructing Other Students
- C-5 Employ Simulation Techniques
- C-6 Guide Student Study
- C-7 Direct Student Laboratory Experience
- C-8 Direct Students in Applying Problem-Solving Techniques
- C-9 Employ the Project Method
- C-10 Introduce a Lesson
- C-11 Summarize a Lesson
- C-12 Employ Oral Questioning Techniques
- C-13 Employ Reinforcement Techniques
- C-14 Provide Instruction for Slower and More Capable Learners
- C-15 Present an Illustrated Talk
- C-16 Demonstrate a Manipulative Skill
- C-17 Demonstrate a Concept or Principle
- C-18 Individualize Instruction
- C-19 Employ the Team Teaching Approach
- C-20 Use Subject Matter Experts to Present Information
- C-21 Prepare Bulletin Boards and Exhibits
- C-22 Present Information with Models, Real Objects, and Flannel Boards
- C-23 Present Information with Overhead and Opaque Materials
- C-24 Present Information with Filmstrips and Slides
- C-25 Present Information with Films
- C-26 Present Information with Audio Recordings
- C-27 Present Information with Televised and Videotaped Materials
- C-28 Employ Programmed Instruction
- C-29 Present Information with the Chalkboard and Flip Chart

Category D: Instructional Evaluation

- D-1 Establish Student Performance Criteria
- D-2 Assess Student Performance: Knowledge
- D-3 Assess Student Performance: Attitudes
- D-4 Assess Student Performance: Skills
- D-5 Determine Student Grades
- D-6 Evaluate Your Instructional Effectiveness

Category E: Instructional Management

- E-1 Project Instructional Resource Needs
- E-2 Manage Your Budgeting and Reporting Responsibilities
- E-3 Arrange for Improvement of Your Vocational Facilities
- E-4 Maintain a Filing System
- E-5 Provide for Student Safety
- E-6 Provide for the First Aid Needs of Students
- E-7 Assist Students in Developing Self-Discipline
- E-8 Organize the Vocational Laboratory
- E-9 Manage the Vocational Laboratory

Category F: Guidance

- F-1 Gather Student Data Using Formal Data-Collection Techniques
- F-2 Gather Student Data Through Personal Contacts
- F-3 Use Conferences to Help Meet Student Needs
- F-4 Provide Information on Educational and Career Opportunities
- F-5 Assist Students in Applying for Employment or Further Education

Category G: School-Community Relations

- G-1 Develop a School-Community Relations Plan for Your Vocational Program
- G-2 Give Presentations to Promote Your Vocational Program
- G-3 Develop Brochures to Promote Your Vocational Program
- G-4 Prepare Displays to Promote Your Vocational Program
- G-5 Prepare News Releases and Articles Concerning Your Vocational Program
- G-6 Arrange for Television and Radio Presentations Concerning Your Vocational Program
- G-7 Conduct an Open House
- G-8 Work with Members of the Community
- G-9 Work with State and Local Educators
- G-10 Obtain Feedback about Your Vocational Program

Category H: Student Vocational Organization

- H-1 Develop a Personal Philosophy Concerning Student Vocational Organizations
- H-2 Establish a Student Vocational Organization
- H-3 Prepare Student Vocational Organization Members for Leadership Roles
- H-4 Assist Student Vocational Organization Members in Developing and Financing a Yearly Program of Activities
- H-5 Supervise Activities of the Student Vocational Organization
- H-6 Guide Participation in Student Vocational Organization Contests

Category I: Professional Role and Development

- I-1 Keep Up-to-Date Professionally
- I-2 Serve Your Teaching Profession
- I-3 Develop an Active Personal Philosophy of Education
- I-4 Serve the School and Community
- I-5 Obtain a Suitable Teaching Position
- I-6 Provide Laboratory Experiences for Prospective Teachers
- I-7 Plan the Student Teaching Experience
- I-8 Supervise Student Teachers

Category J: Coordination of Cooperative Education

- J-1 Establish Guidelines for Your Cooperative Vocational Program
- J-2 Manage the Attendance, Transfers, and Terminations of Co-Op Students
- J-3 Enroll Students in Your Co-Op Program
- J-4 Secure Training Stations for Your Co-Op Program
- J-5 Place Co-Op Students on the Job
- J-6 Develop the Training Ability of On-the-Job Instructors
- J-7 Coordinate On-the-Job Instruction
- J-8 Evaluate Co-Op Students' On-the-Job Performance
- J-9 Prepare for Students' Related Instruction
- J-10 Supervise an Employer-Employee Appreciation Event

RELATED PUBLICATIONS

Student Guide to Using Performance-Based Teacher Education Materials

Resource Person Guide to Using Performance-Based Teacher Education Materials

Guide to the Implementation of Performance-Based Teacher Educat[illegible]

For information regarding availability and prices of these materials contact—

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